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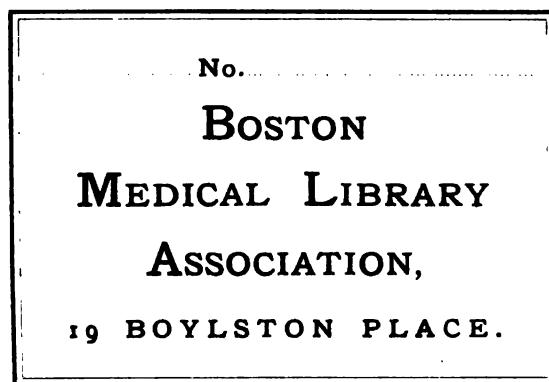
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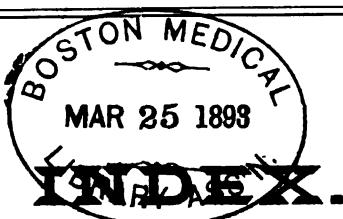
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CATALOGUED
M. S. 1893

**A**

Abdominal Section, What Cases should be Drained after	111
Abdominal Surgery, Rules in.....	26
Abdominal Tumor.....	305
Ablation of the Uterus, Total, in Cases of Large Fibrous and Fibro-Cystic Tumors.....	252
Abortion, Treatment of	180
Abscess of the Epiglottis, Non-Specific, A Case of.....	295
Abscess of the Liver	207, 282
Abscess of the Lung, Case of; Operation; Recovery; Remarks.....	28
Abcesses, Stitch or Mural, and Ventral Hernia in Laparotomy, Prevention of.....	291
Abcesses, Sub-Hepatic and Rectal, of Perityphilitic Origin.....	8
Actinomycosis	199
Air in the Veins.....	31
Albuminuria and Surgical Operations.....	81
American Medical Association.....	142
American Medical Association, Gynaecological Section, Proceedings of.....	155
American Medical Association, Surgical Section, Proceedings of.....	212
American Surgery, An English View of,.....	86
American Surgery, A Canadian View of.....	257
Amputations in the Light of Mechanical Science.....	161
Amputation of the Femur.....	68
Amputation of the Vaginal Portion of the Cervix Uteri in Cases of Suspected Carcinoma.....	65
Anæsthetics, Responsibility of the Surgeon in the Administration of.....	822
Anastomosis, Lateral, of the Ileum, for Malignant Stricture.....	82
Aneurism and Hemorrhoids, Treatment of, by Hypodermic Injection of Blood-Clot.....	845
Aneurism, Treatment of, by Extirpation.....	217
Antiseptic Mixture.....	226
Antiseptic Mixtures.....	111
Appendicitis.....	68
Appendicitis, A Case of Perforating; Operation; Recovery.....	266
Appendicitis, Perforating, The Pathognomonic Signs of.....	200
Artificial Cornea.....	82
Arterial Thrombosis; Acute Gangrene of Right Foot and Lower Third of Leg; Amputation, Complete Recovery.....	270
Asaprol, New Antiseptic.....	255
Ascites in Women, Explorative Incision in.....	81
Asepsis in Intra-Peritoneal Surgery.....	27
Asepsis and Antisepsis in the Lying-in-Chamber.....	848
Aseptic Surgery, Advances in.....	159

B

Bacteriological Institute, The Necessity for a National.....	229
Bartholinitis.....	336
Basedow's Disease, The Surgical Treatment of.....	78
Bassini's Method for the Radical Cure of Hernia, Applied to a Case Complicated by Undescended Testis.....	196
Bone Grafting.....	846
Book Notices.....	28, 256
Brain, Operative Treatment of Fracture at the Base of.....	160
Brain, Penetrating Wound of the.....	188
Brain, Treatment of Foreign Bodies in the.....	297
Bubo, Treatment of.....	54, 317
Burns, Method of Covering Unpigmented Spots in the Skin after.....	286
Burns, The Treatment of.....	281
Bursæ, Hemorrhage into.....	818

C

Cæsarean Section.....	165
Calculus, Exploratory Incision of the Kidney for.....	68
Cancer, The New Treatment of.....	21

Carbuncle.....	808
Carbuncles, Injections of Carbolic Acid into.....	25
Carcinoma, Amputation of the Vaginal Portion of the Cervix Uteri in Cases of Suspected.....	65
Carotid Arteries, Compression of the, for the Treatment of Epileptic Seizures.....	146
Caruncle, Urethral.....	386
Catheter, The Straight Tube as the Simplest.....	224
Catheter, The Ureteral.....	226
Cerebral Tumors, Extirpation of.....	225
Chancres of the Lip.....	150
Cholecystenterostomy.....	82
Choledochotomy.....	181
Cinnamic Acid in Surgical Tuberculosis.....	126
Circumcision, A Clinical Lecture on.....	198
Cleanliness, A Plea for, in Minor Surgery.....	284
Club Foot, The Weight of the Body in its Relation to the Pathology and Treatment of.....	259
Cocaine, Laparotomy Under.....	185
Colectomy versus Laparotomy as a Surgical Term.....	290
Coffee as an Antiseptic.....	255
Collodium Cotton Dressing.....	288
Colotomy, Indications for.....	66
Compression of the Carotids, Convulsions Treated by.....	55
Compression of the Spinal Cord, Operative Treatment of.....	285
Conical Stump.....	248
Cornea, The Electro-Magnet in Cases of Foreign Body in.....	847
Corrugated Paper in Surgery.....	188
Coxitis, The Treatment of.....	77
Cranieotomy for Hydrocephalus.....	187
Curette, Practical Points on the Use of the.....	151
Cutaneous Malignant Epitheliomata (Cancers), Some Considerations on the Treatment of.....	179
Cystic Degeneration of the Cervix.....	301
Cystic Degeneration of the Ovaries.....	242, 278
Cystic Duct, Obstruction of the.....	155
Cystitis, Treatment of.....	82
Cystitis, Treatment of	346

D

Defects of Bones, The Closure of Large.....	24
Dermatol.....	84
Detachment of the Internal Epicondyle of the Humerus.....	55
Disinfection of the Mouth.....	168
Dish-Rag Gourd, As a Substitute for Sponges.....	56
Dislocations, Cases of, from Practice.....	36
Dislocation of the Hip-Joint, A New Treatment of Congenital.....	81
Dislocation of the Hip, Congenital, The Operative Treatment of	281
Diverticula of the Oesophagus.....	108
Drainage, Antiseptic, in Abdominal Surgery.....	111
Drainage in Abdominal Surgery.....	27
Dressings, Moist.....	189
Dropsy, Puncture of the Subcutaneous Tissue in.....	109
Dupuytren's Contracture.....	388

E

Ears, Outstanding, Operation for.....	71
Ecraseur, The, in Tongue Operations.....	224
Empyema of the Antrum of Highmore.....	819
Empyema, Excision of a Rib for.....	346
Elastic Constriction as a Haemostatic Measure.....	809
Elytrotomy, Intra-Ligamentous, and Its Indications.....	341
Empyema following Influenza in a Female Child aged Seven Years, Operation, Recovery.....	146
Enterostomy in Intestinal Obstruction	187
Erysipelas, The Treatment of.....	192
Endometritis, Chronic	98
Endometritis, Chronic Uterine Catarrh and.....	91
Enterostomy in Intestinal Obstruction	187

THE INTERNATIONAL JOURNAL OF SURGERY.

Enter-Anastomosis by Lateral Apposition.....	22	Gonorrhœa in Female Children.....	255
Entorrhaphy, Circulo-Lateral.....	311	Gonorrhœa, Principles of Treatment in.....	318
Enucleation, Vaginal, of Uterine Myomata.....	319	Gonorrhœal Rheumatism.....	94
Epididymitis, Acute, The Treatment of.....	320	Gumma of the Tongue	150
Epididymitis, A Contribution to the Treatment of, without Restriction of Exercise, With a Sketch of a Simple Bandage.....	226	Gunshot Wound in the Right Gluteal Region Penetrating the Rectum, The Treatment of.....	239
Epididymitis, The Dry Poultice in the Treatment of.....	110	Gunshot Wounds of the Abdomen, The Prognosis of.....	202
Epididymitis, The Nitrate of Silver Treatment of.....	8	Gunshot Wounds of the Brain	160
Epileptic Seizures, Compression of the Carotid Arteries for the Treatment of.....	146	Gunshot Wound of the Liver and Stomach.....	156
Epileptic Seizures Treated by Compressing the Carotid Arteries (Correspondence).....	228	Gunshot Wound of the Spine.....	26
Epilepsy (Correspondence).....	255	Gunshot Wound of the Spleen; Suturing of the Diaphragm; Recovery.....	288
Epilepsy Cured by the Trephine.....	144	Gynaecological Operations, Combined	206
Epilepsy, The Operative Treatment of.....	342	H	
Epithelioma.....	388	Haematoma of the Nose.....	241
Epithelioma of the Lip.....	240	Harelip	37
Epithelioma of the Lip.....	385	Harelip, Double.....	126
Epithelioma, The Treatment of, with Injections of Alcohol	25	Hemorrhage, Rapid Dilatation of the Uterus for the Treatment of	163
Epitheliomata (Cancers), Some Considerations on the Treatment of Cutaneous Malignant.....	179	Hemorrhoids, The Treatment of, By Carbolic Acid Injection.....	206
Erysipelas Faciei.....	150	Hernia, A Case of Double Scrotal, of Twenty Years' Duration; Operation; Recovery.....	264
Erysipelas, Treatment of.....	169, 300	Hernia, A New Method of Radical Cure of.....	343
Erysipelas, The Mechanical Treatment of.....	187	Hernia, Exceptional Varieties of.....	288
Europhen	56	Hernia in Infancy and its Correct Treatment.....	88, 89
Excision of All but the Acromial Articular End of the Clavicle for Sarcoma, with Unusual Powers of Motion as a Result.....	124	Hernia, Inguinal, A Few Details in the Operative Treatment of.....	16
Excision of the Breast for Cancer	319	Hernia, Management of Gangrenous.....	158
Excision of the Breast, Remarks on the Operation of.....	104	Hernia, Operable and Inoperable.....	157
Extrication of the Rectum for Carcinoma.....	115	Hernia, Strangulated, A Few Points in the Management of.....	157
Extraction of a Needle. Operation on the Palm of the Hand for.....	126	Hernia, Strangulated, Dangers of Indiscriminate Attempts at the Reduction of, by Manipulation	306
Extra-Uterine Pregnancy.....	270	Hernia, Strangulated, Remarks on, with Report of a Case of Operation, with Recovery	68
Extra-Uterine Pregnancy, Six Consecutive Cases of.....	267	Hernia, The Treatment of Suspected Gangrenous.....	258
F		Hernia, The Treatment of, with Injections of Alcohol.....	254
Felon, What is a.....	97	Hernia, Ventral.....	6
Fibro-Adenoma of the Breast.....	126	Hernial Sac, The Significance of the.....	157
Finger, Crushed.....	385	Hip-Joint Diseases, Is Amputation indicated in	158
Fistula in Ano, How to Deal with.....	174	Hydatid Cysts, The Treatment of	227
Fistula, Faecal, from Umbilical Hernia.....	8	Hydrocele, Radical Treatment of.....	314
Fistula, Ureteral, The Treatment of.....	275	Hydrocele, Cocaine Anaesthesia in the Radical Cure of	166
Floating Kidney. The Treatment of.....	261	Hydrocele of the Cord, Encysted	94
Forced Respiration	160	Hydronaphthol in Cholera	288
Fracture in the Upper Third of the Femur.....	55	Hypospadia, An Operation for, with Three Flaps formed from the Scrotum	218
Fracture of the Femur	6	Hypospadia, Operation for	54
Fracture of the Nasal Septum.....	83	Hysterectomy, Vaginal, for Cancer of the Uterus	296
Fracture of the Symphysis Pubis, Rupture of the Urinary Bladder with.....	122	I	
Fracture, Some Remarks on the Treatment of Elbow.....	44	Ice Bag, Effect of, in Amputation	226
Fracture, Improved Traction Instrument for Dressing	125	Illeus, The Treatment of	19
Fractures in Children, Ununited.....	82	Ileo-Sigmoidostomy	162
Fractures into Joints, Treatment of Suppurating, Compound, Comminuted.....	187	Imperforation of the Rectum	13
Fractures of the Bones of the Hand and their Treatment	50	Implantation of the Ureters unto the Rectum	159
Fractures of the Lower End of the Humerus, Treatment of Uncomplicated	223	Infusion, Intravenous Saline	88
Fractures, Compound, Treatment of	59, 161	Infusion, Saline, for Severe Hemorrhage	88
Fractures, Massage and Mobilization in.....	220	Inguinal Colotomy in Rectal Cancer	182
Furunculosis of the Scalp.....	308	Inguinal Colotomy and Enterostomy, Modification of the Operation of	58
C		Inguinal and Lumbar Colotomy, Comparative Merits of	157
Gall Bladder, Operations.....	267	Inguinal Hernia	240
Gall Bladder, Operations upon the	227	Injuries of the Abdomen not Requiring Surgical Operations, Treatment of	157
Ganglion and Inflammation of Tendon Sheaths.....	226	Injuries of the Foot	138
Gangrene, Senile, Treated by Massage	147	Injuries of the Large Venous Trunks	816
Gangrenous Hernia, The Management of	227	International Congress of Gynaecology and Obstetrics	86
Gasserian Ganglion, Operation for Removal of the	143	Intestinal Lesions in Abdominal Surgery	156
Gastric Ulcer, Desirability of Operative Interference in Suspected Perforation of Chronic	154	Intestinal Obstruction	156
Gastric Ulcer, Perforation of, and its Treatment	187	Intestinal Obstruction, Acute, A Clinical Contribution to the Operative Treatment of	156
Gastrostomy	185	Intestinal Occlusion, The Treatment of, by the Constant Electric Current	57
Gastro-Enterostomy	129	Intestinal Resection, The Rubber Bulb as an Aid to	218
Gauze Pads, Absorbent, as a Substitute for Sponges	189	Intestinal Surgery, A New Method of	165
Gonococci, Examinations of the Blood for	228	Iodine Water and Aristol as Surgical Antiseptics	56
Gonorrhœa, Acute, A New Treatment of	102, 347	Irrigation of Operation Wounds	820
Gonorrhœa, A New Treatment for Acute	287	Ivory Pegs for the Direct Union of Fractured Bones	254

THE INTERNATIONAL JOURNAL OF SURGERY.

K

Kidney, Partial Resection of.....	54
Kidney, Exploratory Incision of the, for Calculus.....	68
Knee, Tumor of the.....	153
Knee Troubles, Elongation of the Ligamentum Patellae as a Factor in the Production of Certain.....	110

L

Lacerations of the Vagina.....	88
Lactic Acid, A New Form of Application of.....	227
Laparotomy, A few Indications for.....	76
Laparotomy, Prevention of Stitch or Mural Abscesses and Ventral Hernia in.....	201
Laryngectomy.....	286
Lateral Anastomosis of the Ileum for Malignant Stricture.....	287
Ligation of the Hypogastric Artery.....	160
Lipoma	271
Lithotrity in Children.....	164
Liver, Diseases of the, and Surgical Operations.....	288
Liver, Floating, with Report of a Case.....	382
Lupus Erythematosus.....	308
Lupus Vulgaris.....	308
Luxations of the Thumb, The Operative Treatment of Irreducible.....	9
Lymphangitis.....	271
Lysol.....	255

M

Malignant Tumors, Pyotkinian in	234
Massage and Mobilization in Fractures.....	220
Massage of the Prostate Gland	289
Mediastinum, Posterior, Surgical Operations upon the.....	167
Medical Meetings, The Importance of.....	118
Metastasis of the Enteric Fever Bacillus	348
Microbes, What becomes of Pathogenic, in the Dead Body	228
Moose-Pap as a Surgical Dressing.....	139
Mother-Marks, Removal of.....	348

N

Naevus	240
Nasal Douche, The.....	117
Necrotic and Carious Bone, Removal of, with Hydrochloric Acid.....	54
Nephrotomy and Nephrectomy Successfully Performed on the Same Patient for Multiple Abscess.....	298
New York Polyclinic, Annual Announcement of the.....	201

O

Oesophageal Stricture, Retrograde Dilatation of.....	26
Oesophageal Stricture, Ten Cases of.....	156
Oesophagus, The Surgery of the.....	184
Onychia Syphilitica and Rupia.....	150
Osteo-Myelitis	208
Osteo-Myelitis of the Femur.....	94
Osteo-Myelitis, Suppurative, Perforative, of the Shafts and Epiphyses of Bones, with Report of Six Illustrative Cases.....	826
Otitis Media, The Surgical Treatment of.....	347
Ovarian Cyst, Large, Multilocular; Operation, Recovery.....	292
Ovaries, Cystic Degeneration of the.....	242, 278
Ovariotomy, Treatment of the Pedicle in.....	164
Ovariotomy During Pregnancy.....	48
Over-Pressure in Children Causing Mischief.....	287

P

Pachysalpingitis.....	67
Paralysis of the Insane, General, The Surgical Treatment of.....	252
Patella, Treatment of Fractured.....	846
Pelvic Disease, Relations of, to Psychical Disturbance.....	270
Pemphigus	808
Pericarditis, The Operative Treatment of	110
Pericardium, A Needle in the.....	254
Peritonitis from Gallstones.....	155
Peritonitis, Prevention of	821
Perityphlitis, The Treatment of.....	19
Perityphlitis, The Surgical Treatment of.....	258
Peroxide of Hydrogen, in Diseases of Mucous Membranes	56

Peri-Uterine Inflammatory Deposits, Pregnancy complicated by.....	4
---	---

Phantom Tumors of the Abdomen	271
Phlegmons, The Treatment of Severe.....	75
Plaster Jacket, A Method better than Suspension of Applying a.....	221
Plaster-of-Paris Bandage, Convenient Apparatus for Preparing the.....	269
Pneumectomy, Partial, for Gangrene; Recovery.....	200
Pott's Fracture, Relief of Deformity after a Complicated.....	128
Pott's Disease, Operative Treatment of.....	305
Pregnancy Complicated by Peri-Uterine Inflammatory Deposits.....	4
Pregnancy, Extra-Uterine.....	845
Prostatic Hypertrophy, The Radical Treatment of.....	79
Puerperal Fever.....	176
Puerperal Fever and Its Treatment.....	209
Pulmonary Gangrene Cured by a Surgical Operation.....	186
Pus Bacillus.....	168
Pylorectomy	285
Pylorotomy and Gastro-Enterostomy, Combined, for Carcinoma of the Pylorus, Observations on, and a Successful Case of.....	14
Pyloric Stenosis, Surgical Treatment of.....	168
Pyosalpinx.....	8

R

Ranula Radical Cure of.....	227
Rectal Cancer, Extirpation versus Colotomy in.....	847
Rectal Cancer, Surgical Treatment of.....	815
Reconstruction of the Pelvic Structures in Women.....	298
Rectum, A New Method of Excising the Two Upper Portions of, etc.....	840
Rectum, Extirpation of the, for Carcinoma.....	115
Resection of the Knee.....	165
Resection of the Os Calcis and Astragalus.....	110
Resection of the Urethra.....	51
Resection, Partial, of the Kidney.....	54
Retroflexions of the Uterus, Complicated, The Treatment of.....	92
Retroversion of the Uterus.....	278
Rheumatic Affections, Chronic, of the Joints.....	287
Rheumatic Arthritis, Chronic.....	126
Rodent Ulcer.....	150
Rodent Ulcers, The Treatment of.....	818
Rupture of the Bladder, with Fracture of the Symphysis Pubis	122
Rupture of the Bladder, The Treatment of.....	12
Rupture of the Uterus, The Etiology and Therapeutics of.....	47
Ruptured Urethra, Immediate Suture of.....	80

S

Salicylate of Soda, The Healing of Wounds through the Use of	268
Salpingitis.....	801
Salpingitis, Acute	273
Salpingitis, Chronic	151
Salpingitis, The Conservative Treatment of	244
Sarcoma of the Cheek	129
Sarcoma of the Prostate Gland	275
Sciatica in Varicose Cases, Surgical Treatment of	166
Scirrhus of the Breast	87
Senn's Plates, A Substitute for	286
Sigmoidostomy Simplified	53
Sinuses Resulting from Abdominal Section, The Causes and Treatment of	203
Skin Grafting, A New Method of	41, 286
Skin Transplantation, after Thiersch	222
Social Clubs for Doctors	289
Spina Bifida	250
Sprains of the Finger-Joints, Chronic, The Treatment of	79
Sprains, Treatment of	25
Strangulated Hernia (Correspondence)	112, 140
Strictures of the Rectum, The Treatment of Syphilitic	248
Stricture of the Urethra	211, 274
Stricture of the Urethra and its Treatment	10
Stricture, Traumatic, Resection of the Urethra in Cases of Sub-Diaphragmatic and Rectal Abscesses of Appendical Origin, Remarks on	348
	72

THE INTERNATIONAL JOURNAL OF SURGERY.

Subinvolution.....	151
Sublimate Baths, Treatment of Wounds by.....	27
Suggestion, A Pertinent.....	118
Sulfonal, Powerful Effect of, in Arresting the Cramps of Fractured Limbs.....	160
Suppuration.....	167
Suppurating Inguinal Glands, Treatment of.....	88
Supra-Pubic Cystotomy.....	268
Surgery, Compatibility of Conservative and Aggressive.....	323
Surgery, Progress of, in 1891.....	1
Surgery in the Future.....	316
Surgery of the Nose, Cosmetic.....	160
Surgery of the Gall Bladder and Ducts.....	155
Surgical Dressing, Straw Ashes as a.....	27
Surgical Pathology of the Bone Medulla and Spleen.....	148
Suture, A New.....	110
Suture, Immediate, of Ruptured Urethra.....	80
Suture, Secondary, of the Radial Nerve.....	84
Sutures, Rat-Tail.....	166
Sympyseotomy.....	114
Syphilis and Legislation.....	141

T

Talipes Equino-Varus, Removal of the Astragalus for.....	161
Tendon, Contracted.....	385
Tendon Suture.....	26
Tendon Suture, Advantages of the Buried.....	293
Tendons, Suturing of Divided.....	346
Tendons, Treatment of Divided.....	285
Tenotomy, A New Method of.....	137
Thiophen-Iodide.....	111
Thoracocentesis	220
Tongue, Surgery of the	164
Torsion of Arteries, On the	188
Torticollis, Spasmodic, A Contribution to the Etiology and Treatment of.....	119
Tracheotomy, Reclus-Dawson Technique of.....	320
Tracheotomy, Soft Canulas for.....	347
Traction Instrument, Improved, for Dressing Fractures.....	125
Translucency of Solid Tumors	58
Translumination of the Mastoid Process.....	162
Trephining, Intermediary, in Osteo-Phlebitis of the Cranium	188
Trephining, Prehistoric	58
Trigeminus, Resection of the, within the Cranial Cavity.....	285
Tubal Pregnancy, The Treatment of Ruptured.....	280
Tuberculosis of the Joints, Injections of Iodoform Oil in	55
Tuberculosis of the Joints, The Conservative Treatment of.....	284
Tuberculosis of the Joints, The Modern Treatment of.....	279
Tuberculosis of the Hip-Joint, Iodoform Injections for.....	158
Tuberculosis of the Testicle.....	82
Tuberculosis of the Testis	129
Tumor of the Knee.....	158
Tumors of the Larynx, Four Cases of, Successfully Treated by Operation.....	31
Tumors, The Early Extirpation of	344

U

Ulcer of the Lip.....	89
Ulcers of the Leg, Treatment of, with Unna's Zinc Dressing.....	163
Ulcers of the Legs, Gutta-Percha Paper in.....	27
Ulcers, The Treatment of Leg.....	249
Ulcers, Vaginal, The Local Treatment of, with Alcohol.....	254
Uremia, Pathology of	348
Urteral Fistula, The Treatment f	228
Urteral Meatus, Artificial	343
Urethral Calculi, A Rare Case of, in a Child.....	87
Urethral Diseases, The "Cool" Sound and Its Application in	20
Urethritis, Chronic, and Its Treatment.....	39
Urethrotomes, An Improvement on.....	884
Urinary Abscesses, Treatment of	100
Urinary Fever, The Pathology of	169
Urination, Frequent	67
Uterine Adhesions.....	98
Uterine Appendages, The Ultimate Results of Operations for Removal of the	86
Uterine Adnexa, The Surgical Treatment of Diseases of ..	383
Uterine Elevator in the Diagnosis of Diseases of the Uterus and Its Appendages	151
Uterine-Fibromata, Treatment of	347
Uterus, Displacement of the	180
Uterus, Undeveloped...	242

V

Vaginal Debridement and Antiseptic Drainage, Treatment of Pelvic Suppuration by.....	166
Varices of the Lower Extremities, The Treatment of	226
Varicocele, The Cremasteric Reflex in	159
Varicocele, The Treatment of	298
Varicose Veins	264
Vermiform Appendix, The Present Status of the Surgery of the	170
Visceral Phlebotomy	159
Volvulus of the Sigmoid Flexure, The Operative Treatment of	105

W

Wound-Infection, The Causes of, and the Use of Antiseptic Agents in	84
Wound Treatment	320
Wounds of the Abdomen, The Treatment of Penetrating	101
Wounds of the Femoral Vein	22
Wounds of the Heart	82
Wounds of the Ureters in Laparotomies	25
Wry-Neck, Operation for	282
Wry-Neck, Spasmodic	25

Z

Zinc Dressing, Unna's, Treatment of Ulcers of the Leg with	163
--	-----

265

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THE PROGRESS OF SURGERY IN 1891.

The past year has been characterized by that steady progress in the science and art of surgery, which has distinguished its predecessors since the beginning of the antiseptic era. The advance made has been rather in the direction of a perfection of our operative technique than in the invention of new methods of operation. At no time in the history of medicine has surgery occupied a position of such proud eminence, and the distinction formerly made between medical and surgical diseases has been to a great extent obliterated, since the surgeon is now frequently consulted in cases which were formerly referred exclusively to the physician. No better illustration of this fact can be afforded than in the treatment of appendicitis. If we are to judge from the numerous discussions of this subject before the leading medical societies in this country and Europe, during the past year, the prejudice of physicians against surgical intervention in this disease is gradually yielding under the force of a clearer conception of the morbid process. The opinion is gradually gaining ground that the surgeon should be associated with the physician in the treatment of most cases of appendicitis. The diagnosis of this disease in its early

stages is still a matter of difficulty, and the "McBurney Point," to which so much importance has been attached by some authors, has proven of no value.

A large amount of successful work has been done in intestinal surgery during the year. The value of gastrostomy in averting the horrors of starvation in cases of cancer of the esophagus is now fully recognized, and important contributions on this subject have been made by Drs. Weir, Powers, and others. A possible improvement in the technique of operations for intestinal anastomosis appear to be the raw potato-plates proposed by Dr. Dawbarn as a substitute for Senn's plates and similar devices. German surgeons, have, to a great extent given up the use of apposition plates, and returned to the method of direct suture. To obviate the dangers of hemorrhage and faecal extravasation into the abdominal cavity in intestinal anastomosis and to reduce the time of operation, Dr. McGraw has devised a new method, which consists in uniting the opposing coils of intestine with several rows of elastic suture. He endeavors in this way to secure adhesion of the intestinal surfaces before the ligature cuts through and establishes an opening of communication.

Notwithstanding the improvements in the technique of operations for the radical cure of hernia relapses are still frequent, as has been demonstrated by Dr. Bull in a careful statistical study. The most recent contribution to the operative treatment of hernia has been made by Mr. Lawson Tait, who in a paper read before the British Medical Association, recommended that in every variety of hernia, median abdominal section should be performed, the intestine drawn up from within, and the ring closed on the inside with silk worm gut sutures.

The literature of operative procedures upon the brain and spinal cord, has been enriched by numerous records of brilliant and successful operations, many of which have been performed by American surgeons. Thanks to the labors of the neurologist, our knowledge of the symptomatology, pathology and topography of cerebral and spinal lesions, has been greatly improved, so that the surgeon has been enabled to operate more systematically and with a greater promise of success. In an interesting article recently published in the *Journal of the American Medical Association*,

Dr. E. Lanphear, of Kansas City, records twenty-three cases of brain surgery, with only two deaths, and expresses the view that we have not awakened to the possibilities in operative surgery of the nervous system. Differences of opinion still prevail as to the efficacy of surgical procedures in epilepsy, some authorities, Professor Agnew, for instance, regarding them of only temporary benefit, while others give a more encouraging prognosis. The value of surgical intervention in abscesses of the brain and intra-cranial hemorrhage has been demonstrated, beyond cavil, by the records of numerous successful cases. The operation of craniectomy, for the cure of microcephalus, which was proposed by Lannelongue and modified by Prof. Wyeth, has been resorted to with success in a number of cases during the past year, and a number of successful extirpations of cerebral tumors have been reported. In the surgery of the spine, the outlook is very promising. Excellent results have been obtained in Pott's disease and fractures from resection of the vertebrae; abscesses have been evacuated, and tumors removed. An ingenious procedure for securing rest of the spine in cases of fracture and spondylitis by wiring the spinous and even the transverse processes has been originated by Dr. Hadra, and practised with success in one case. In view of the simplicity of the operation and its freedom from danger, it is certainly worthy of a careful trial.

In gynaecological surgery the doctrine of conservatism as applied to the removal of the uterine adnexa is constantly gaining new advocates. While there is a general agreement as to the necessity of extirpating the tubes and ovaries when they have become irreducibly diseased, there is a growing tendency to preserve these organs, if degeneration has not advanced too far, and to accomplish a cure by the breaking up of adhesions, partial resection of the tubes, and enucleation of cysts of the ovary.

The treatment of aneurisms by the formation of white thrombi within the sac, which was originated by Macewen, has been employed with more or less success in a number of instances. This method consists in the introduction of aseptic pins into the aneurismal sac, which are moved over its inner surface and, by the irritation to which they give rise, induce coagulation.

The value of surgical procedures in certain diseases of the liver and gall bladder is demonstrated by the increasing number of successful cases. To control the profuse hemorrhage which attends the excision of tumors of the liver, the elastic ligature has proved very efficient. The observations of von Meister, who has recently repeated Ponfik's experiments, are not without surgical interest. His investigations on animals have shown that the liver tissues possess a

marked capacity for regeneration. It was found that as much as three-quarters of the liver could be excised without causing death, and that complete regeneration had taken place within thirty-six days after the excision.

In the surgical literature of the past year a number of cases have been recorded where calculi have been removed from the common bile duct and the opening successfully sutured, where a communication has been established between the common duct and the duodenum, or between the gall bladder and the intestine. In some instances the walls of the gall bladder have been found so friable that extirpation had to be performed in place of the contemplated formation of a biliary fistula.

A promising field for surgical procedures are the respiratory organs. The case recently reported by Tuffier, in which the apex of a tuberculous lung was successfully excised, is a striking instance of the progress made in pulmonary surgery. The incision and drainage of pulmonary abscesses and cavities has been employed with favorable results in a number of cases.

Our list of antiseptics has been increased by two new drugs, aristol and europhen, which are recommended as substitutes for iodoform, and have proved their efficacy in various surgical affections. Owing to their freedom from disagreeable odor and poisonous properties, they bid fair to supplant iodoform in many conditions in which this drug is ordinarily employed.

The year 1891 will ever be memorable in the annals of medicine, by reason of the unparalleled efforts put forth by investigators in all parts of the world to combat that common foe of mankind, tuberculosis. Although Koch's discovery has proved a fiasco, it has at least served to point a moral, and physicians will not be as ready in the future to adopt remedies before they have become fully acquainted with their possibilities and dangers. Liebreich's treatment of tuberculosis by injections of cantharidinate of potash has attracted but little attention outside of Germany. The method of treating surgical tuberculosis by injections of chloride of zinc, which was introduced by Lannelongue, has given some good results in the hands of its originator, but the time of observation is yet too short to permit of positive deductions regarding its value.

In this brief sketch of surgical progress during 1891, it has been possible to chronicle only a few of the surgical achievements of the year. The American surgeon has every reason to feel proud of the brilliant work of his countrymen in the domain of surgery, and the day is not far off when his confreres in Europe will be compelled to recognize his prominence in this branch of the healing art.

Original Articles.

THE NITRATE OF SILVER TREATMENT OF EPIDIDYMITS.

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AN epididymitis is an unfortunate complication in the course of a gonorrhœa. It is unfortunate for the patient, apart from the suffering and confinement it occasions, from the fact that it necessarily interrupts the only rational, *i.e.*, the local treatment of his urethral disease, for a varying time, and so prolongs his malady. And it is unfortunate for the doctor, inasmuch as he is almost certain to get blamed for its occurrence; his injections, his soundings, or his local applications being the cause of the swollen testicle, in the patient's mind. He may be loth to believe this of his surgeon; but it is so certain to be suggested to him by sympathetic friends that he necessarily entertains it. Hence has arisen a widespread dread of all manner of local procedures in urethral gonorrhœa, in spite of the fact that it forms the sole standard treatment both in the acute and in the chronic stages.

It is not my purpose, however, to discuss in this article the causes of epididymitis, interesting though that might be; but rather to consider its treatment—and especially by the means which in my hands has given satisfactory results in a long series of cases.

I need not insist, of course, upon the careful following out of the line of treatment of the testicle, which experience has shown to most often carry it unharmed through an attack of urethritis. A well fitting suspensory is a matter of necessity in every case of gonorrhœa. It should be put on in the morning before the patient gets out of bed, and not removed until he is in bed at night. The urine should be kept bland and non-irritating by the avoidance of all liquors, condiments, and foods that tend to render it otherwise, as well as by the use of alkalies and alkaline diuretics in doses of sufficient magnitude to render the secretion neutral or even alkaline. Finally strict sexual hygiene must be observed. But sometimes, from the patient's carelessness in what he considers a trivial affection, and sometimes, also, in spite of our most painstaking efforts, he begins to notice obscure recurring pains and aches located apparently deep down in the pelvis on one side, and usually referred by him to the intestine. A free defæcation, especially after the use of some purgative, relieves them for a time, but

they return, and with increased severity. He is sensible of a dragging sensation in the testicle, and then of some swelling and tenderness behind and around it. An examination reveals a commencing epididymitis.

Not always, however, does the patient consult his surgeon at so early a stage. Sensibility to pain varies so enormously that whilst one man will look pale and drawn and complain bitterly when examination reveals a hardly appreciable amount of swelling of the epididymis, another will go about his usual work and not consult a physician while an epididymitis of much severer type runs its entire course. I well remember a man of fifty years, a builder, who came to consult me during the first year of my practice. He was a large, stout man, and he said he was compelled to stand almost all day and to climb ladders, while supervising his workmen. The scrotum was a large tense bag—apparently filled with soft material. At the lower border it looked as if pus was pointing and about to break through the tissues; and true enough, before I had time to get a receptacle, the enormous abscess burst. Here was a man with an acute suppurative inflammation which had completely destroyed and disorganized the testicle and epididymis on one side, and who yet had continued to do laborious work day after day.

The epididymitis once begun, its course may vary. In some cases the swelling is slight, and soon subsides under appropriate measures. In others, and the majority of cases, it goes on increasing for a week or more, then slowly begins to subside, and ends in resolution in from two to four weeks. In a very few of the worst cases, the process goes on to suppuration.

In all cases the treatment I have pursued is as follows:

1. *Rest.*—This must be absolute—even urination and defæcation being performed with the help of the bed pan. The patient often fails to appreciate this fact, and, especially in the mild cases, often construes it as meaning the lying dressed on a sofa or in an arm chair, with occasional walking around or even going up and down stairs. Such rest, of course, is of little benefit. I insist upon absolute quiescence.

But not only must the body and the inflamed organs be put in splints as it were; the urethra must be given thorough rest also. As is well known, the discharge usually stops when the swelling of the testicle comes on, to reappear when it subsides. Whether this occurs or not, all injections, or use of instruments, must be immediately discontinued. The patient will not like to leave his clap untreated, especially if it continues to discharge; but you will

do him more harm than good if you attempt to treat the urethral disease while the epididymis is actively inflamed.

The urine must be kept bland, so that its periodical discharge shall not irritate and further inflame the urethra. This is to be accomplished by the free use of Vichy or Seltzer water, alone or with milk, by large doses of the acetate or citrate of potash, or even if necessary by large doses of bicarbonate of soda. If the pain on micturition persists the soda must be pushed until it ceases. I have given as much as four drachms daily; feeling that the slight gastric disturbance, loss of appetite, etc., was more than counterbalanced by the removal of all source of irritation from the urinary tract.

Finally, the testicle itself must be supported. A piece of broad roller bandage is fastened around the waist; a large silk handkerchief is folded into a triangular shape, and the testicle is slung in it; the two acute angles being attached to the waist-band on either side, and the right angle corner being brought up in front over penis and scrotum, which are thus contained in the base and body of the triangle.

2. Purgation.—This should be thorough and is very important. At the beginning of an attack it is well to start with a mercurial—say one grain of calomel hourly till ten have been taken, followed by a full dose of Rochelle salts, or, the Villacabras mineral water, if the bowels are not already moving freely. Throughout the time the patient is in bed this mild purgation should be kept up by daily doses of compound liquorice powder or a mineral water. It keeps the abdominal viscera empty, diminishes intra-pelvic pressure, and generally conduces to the comfort and well being of the patient.

3. Local treatment.—From the very beginning of the inflammation the scrotal skin over the entire affected testicle, as well as the skin covering the spermatic cord of that side, and the corresponding hypogastric region of the abdomen, should be thoroughly painted three times daily with a solution of nitrate of silver in water, forty grains to the ounce. It should be allowed to dry on. After two or three applications the skin turns brown and a slight burning and stinging follows the application. The brown color deepens into black, and soon the hardened epidermis begins to crack and scale off. As it peels a red sensitive epidermis is exposed. The painting is persisted in, and a considerable amount of burning and smarting is felt, which lasts perhaps fifteen minutes after the painting. But the patients are usually loud in their praise of the counter-irritant, which markedly relieves the distressing pain and ache which is so prominent a feature of the disease.

Under this simple treatment the pain soon disappears entirely, and then the swollen epididymis begins to lessen in size. Now is the time when it is especially difficult to keep the patient in bed; and now is exactly the time when it is most important to do so. Getting up before the swelling has almost gone, protracts recovery and tends to cause relapses. The longer you can keep the patient in bed, the better will be your result, and the quicker your cure.

We cannot, of course, await the entire subsidence of the swelling. That is a matter of weeks—sometimes of months; nay, I have felt the hard and nodular tail of the epididymis distinctly enlarged two years after an attack.

The only other treatment that is required is an occasional dose of bromide to quiet restlessness, and sometimes though rarely, some morphia to still the pain.

After the epididymitis has subsided, the discharge usually reappears with virulence. The only treatment I employ for at least two weeks is the internal use of antacids and the balsams. I believe it to be dangerous to allow the patient to begin injecting immediately. Sounds, deep urethral injections, and endoscopic measures should never be employed until a full month after the epididymitis has run its course.

25 West 53d Street.

PREGNANCY COMPLICATED BY PERI-UTERINE INFLAMMATORY DEPOSITS.

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THERE was a time when I thought that inflammatory deposits in the neighborhood of the uterus, in most instances prevented impregnation, and if that was not the case, abortion would occur during the early months of pregnancy.

Very little has been written on this subject, but I am convinced that this opinion is held by many physicians; as it is not at all uncommon for pregnant women to tell me that they have had severe sickness following a confinement, and that their medical adviser has either told them that they would probably not again become impregnated, or if so, they would "miscarry." Still in many instances they have subsequently given birth to a number of children.

In my own practice, I have had a number of patients with extensive peri-uterine inflammatory deposits, give birth to healthy children at term. Some of them have had repeated abortions at about the same month of pregnancy, and later have carried a child nine

months, as is the case in a history that is to follow, while others have carried children in spite of their disease without mishap.

Before going farther I will say, that by the expression "Peri-uterine Inflammatory Deposits," I do not limit the deposit to any one anatomical structure, as Virchow has limited the terms perimetritis to inflammation of the peritoneum that covers the uterus and its surroundings, and parametritis to inflammation of the connective tissue surrounding the uterus.

With this introduction you are invited to listen to the narration of three histories that have been selected from a number, as typical of the course of pregnancy complicated by peri-uterine inflammatory deposits in three different localities.

In February, 1887, I was called to see Mrs. K. She was twenty-four years old, had two children, both delivered with forceps; eight months after the birth of her second child, she had a laceration of the cervix operated on, which did not unite; forty-eight hours after the operation a peritonitis developed from which it was supposed that she could not recover; for three months she was confined to her bed. This was followed by three abortions; two at the third month and one at four and a half months of pregnancy. When I first saw her she was thought to be four and a half months gravid. From the beginning of pregnancy there had been irregular hemorrhages accompanied by pain, and for the last two months she had rarely been free from pain. She also stated that there was more or less hemorrhage nearly all of the time, occasionally it was very profuse and accompanied by pains similar to those of labor.

I found a hysterical woman with slight haemorrhage and severe pains, which was very slightly relieved by the free administration of morphine for forty-eight hours. Dr. E. H. Grandin kindly saw the patient with me, and it was thought that she could not go to term, and that the uterus had to be artificially emptied or her life would be lost. Chloroform was given followed by ether. The cervix was dilated sufficiently to admit three fingers; but on account of a dense deposit of new formed tissue about it, in spite of an extensive laceration, it was impossible to further complete the dilatation. It was thought unadvisable to nick the cervix, and for that reason a foetus in the fifth month was broken up with the fingers and delivered piecemeal. The patient made a good recovery, but a few months later had another abortion and in about a year again became impregnated; but this time succeeded in carrying her child to full term.

In this case the inflammatory deposits were extensive, but they were much more marked about the lower part of the uterus than anywhere else.

January 15, 1889, I was consulted by Mrs. W, who stated that she was twenty-three years of age, had been married four years, and aborted from an injury at the second month of pregnancy three months after her marriage, being confined to her bed three months. Since then she has never been well, has had a number of attacks of peritonitis, at least two of which were undoubtedly very severe, as her attending physicians thought that she could not recover.

On making an examination I found prolapse of both ovaries; double salpingitis, I imagine interstitial in variety; a considerable deposit of new formed tissue at both sides of the uterus; and a uterus that was held very firmly in a retroflexed position by adhesions that were apparently attached to the whole posterior aspect of the fundus. This patient is still in my care; but has not had another attack of acute peritonitis. Since she has been under my observation she thinks that she has been impregnated twice, but has each time aborted during the second month. As she lives out of the city I have not been able to positively verify this statement. I do not believe that this woman will be able to carry a child to full term before the adhesions that firmly hold her uterus retroflexed and envelope the fundus are broken up by a surgical operation, or are to a great extent absorbed. By this statement I do not wish to convey the idea that I advocate surgical interference in this class of cases, excepting after all other simpler means have been thoroughly tried and failed.

February 2, 1889, Mrs. R, came to my office. She stated that she was twenty-two years of age and had never been pregnant. There was severe dysmenorrhœa, with considerable pain in the back and sides during the entire time. She was very anaemic, which was largely due to the fact that she was obliged to sew by hand from ten to twelve hours a day in a poorly ventilated apartment. On examination I found an anteflexion, also quite marked thickening and tenderness at both sides of the uterus. She was treated palliatively for about three months with very little benefit, excepting partial relief of the dysmenorrhœa. I was asked if I thought that she could become impregnated, and as there undoubtedly was a double salpingitis, also quite extensive subacute peritonitis with a large amount of new formed tissue at both sides of the uterus, my prognosis was unfavorable. Last spring I was surprised, when told by the physician who sent her to me, that she had given birth to a healthy child.

This patient had extensive inflammatory deposits about her uterus, but the fundus was not fixed, and as far as we could tell was not enveloped by new formed tissue.

In looking over the histories of patients with inflammatory deposits about their uteri, I am led to

the conclusion, that while it is impossible for some of them to again become impregnated, many will. Some carry their children as though nothing had happened, others will abort a few times and then give birth to a child at term; while a third class will continue to abort, throughout the child-bearing period. In carefully searching my histories for a cause for this, I found that patients with inflammatory deposits about their uteri who aborted habitually, in nearly every instance, had their fundus bound down by adhesions, and the more it was fixed the more persistent were the abortions.

In conclusion I will say that I have purposely omitted to mention a long list of symptoms that are either of reflex origin, or are due to pressure or obstruction produced by inflammatory déposits in the neighborhood of the gravid uterus; and have called your attention to what I consider to be, in a large majority of cases, the most serious result, namely, "abortion." I believe it of paramount importance to ascertain the extent to which the body of the uterus is fixed before making a prognosis. For if the body of the uterus is held in a fixed position, especially if it is retroflexed, I am of the opinion that abortion will invariably result as long as the condition remains; while, on the other hand, there may be extensive deposits and adhesions about the lower part of the uterus, which may obstruct the passage of a child, and still in a large percentage of cases will not cause the uterus to prematurely empty itself.

72 W. 45th Street.

Intrapерitoneal Hemorrhages.--Dr. Veit (Volkmann's Samml. Klin. Vortr.) discusses the question, why in some cases these hemorrhages are arrested spontaneously, while in others this does not happen, and death ensues. The most frequent cause of intraperitoneal hemorrhage is ruptured tubal pregnancy. The author's experience demonstrates that coagulation of blood takes place in the abdominal cavity, but more slowly than in other parts of the body. The action of pressure in arresting the bleeding cannot be relied upon, owing to the absence of counter-pressure in the abdominal cavity. The conditions for effective contraction of the vessels are also wanting in tubal pregnancy. It follows, therefore, that unless adhesions exist which limit the effusion of blood and lead to formation of an hæmatocle, the hemorrhage will not be spontaneously arrested. If it takes place in a previously healthy abdominal cavity, the case usually terminates fatally. In laparotomies for intraperitoneal hemorrhage, elevation of the pelvis is of great advantage for controlling the hemorrhage; ligation of the bleeding vessels, as well as the uterine and spermatic arteries is also required.

Clinical Department.

VENTRAL HERNIA—FRACTURE OF THE FEMUR.

BY THOMAS H. MANLEY, M. D.,
Visiting Surgeon to the Harlem Hospital, etc.

THE first patient which I will operate upon this afternoon, is a colored woman, thirty-nine years of age. She was married at the age of eighteen years and has had three children. She enjoyed fairly good health up to five years ago, when she began to have certain irregularities at the menstrual period, characterized by pain in the back and sides; and after a time, her menses became intermittent and abundant in character. In fact, she was suffering from a species of metrorrhagia of a very exhausting nature.

Simultaneously with this, her general health began to deteriorate; she lost in flesh and strength, and was compelled to give up her place as chambermaid in a hotel.

About this time she was admitted into one of the City hospitals for operation, with the view of removing neoplastic formations in connection with the broad ligaments of the uterus. In other words, she was suffering from uterine fibroids, which, as you know, though somewhat of rare occurrence with the white race, are quite common in the negro. After she was admitted to the hospital, an operation was performed on her with a view to removing these fibroids through an abdominal incision. She made a good recovery from the operation, but though scarcely three months had elapsed after she returned to her former place, she noticed a small pouch presenting itself between the pubes and umbilicus, a little to the left of the median line. At first, this was non-sensitive and not painful, and could be easily reduced, but as time advanced, it grew larger and larger, and after a while assumed such proportions that it could be only in part returned to the cavity of the abdomen. She says that for two years it has been of its present volume, and that once a month she has attacks of vomiting, with persistent constipation, accompanied with considerable tympanites and pain which is diffused over the entire abdomen. In other words, she suffers from periodical strangulation of the incarcerated mass, which lies outside the abdominal cavity.

On going to bed, making warm applications over the abdomen and drinking hot liquids, after a few hours time, the pain subsides, the vomiting ceases, and the flatulence passes away. She then eats as usual and is comfortable for another spell.

In connection with this, it may be well to state, that from her present condition, it is quite evident that whatever operation was contemplated or completed at the time she was under active surgical care, that the uterine appendages were only in part, if at all, enucleated. The operator, after he had opened the abdominal cavity, might have possibly found the ovaries so embedded and fused by old fibrous adhesive inflammation with adjacent organs, that their removal was deemed impossible. There is no question but this woman has fibroids, judging from the evidence which is furnished by examination under ether; but as to whether they are submucous, interstitial or subserous, is as yet a matter of doubt; our efforts at defining the exact character of these neoplasms being frustrated through the presence of a very thick abdominal wall of fat. I wish to say, that I consider this a very unfavorable case for operation, as the patient has suffered a great reduction of strength and sleeps but very poorly. Furthermore, I fear the immediate consequences of shock in connection with the necessary exposure of so large a mass of omental and intestinal structures. It is besides well known to surgeons, that the return in long standing cases of large hernial extrusions like this into the abdominal cavity, and their retention within it, is not without danger to the respiratory organs, owing to the edematous condition of the lungs which it may excite by interfering with the pulmonary circulation and free action of the diaphragm.

Dr. Manley then proceeded to operate, by dividing the integument in a vertical direction over the large oval mass; then he gradually detached the integument from the subcutaneous cellular membrane on either side, until the neck of the hernia was found. He said he took this precaution, because he expected to encounter no serous sac, proper to the hernia, and hence when he divided the cellular membrane he would come in immediate contact with the intestines. He desired particularly, when he had reached that stage, that the various steps of the operation might be completed as hastily as possible. The cellular membrane was then divided, and a large amount of protruding omentum and intestine was found to occupy its interior. The omental tissues were found intimately adherent to the adipose tissue of the abdominal walls; so much so that their separation was attended with very considerable difficulty and a free hemorrhage. After having freed the omental extrusion, the annular opening through which the mass had come out was divided along the inner margin of its upper portion, in order to so increase its width that the extrusion might be readily restored within

the peritoneal cavity. The fascia transversalis and the internal aponeurotic sheath of the recti muscle on either side, were sewn together with strong silk sutures, after which the recti muscles were approximated in a similar way.

The operator then said that, inasmuch as his incision had necessarily brought him into the region of the pelvis, and as could be readily seen, a large mass of uterine fibroids projected into the lower angle of the wound, he would remove those which were within reach by a process of decortication; that is, by passing a scalpel through the serous coat which enclosed them; then introducing the index finger, and freeing the nodular fibroid from its connections and shelling it out through the incision. In this way, he removed six fibroids varying in size from a hen's egg to a large marble, their enucleation being attended with but slight hemorrhage. The remainder of the abdominal wound was closed in the usual way. The patient rallied well from the ether and presented every prospect of recovery, until the second day when a violent vomiting spell set in. She had no fever, but there was great bodily weakness, attended with a very quick, small feeble pulse. Nutritive enemata were administered and sufficient morphia given to secure relief from pain, as she suffered considerably in the region of the old hernia. On the fifth day she showed signs of collapse early in the morning, and died at five o'clock that evening.

A post-mortem examination was made twenty-four hours after death. There was no inflammation of the peritoneum, nor hemorrhage into the peritoneal cavity, but a strangulation of the intestines was present. Owing to the violent vomiting and the increased intra-abdominal pressure following the operation, the sutures which included the peritoneum had given way, and a coil of intestine, about nine inches in length, had been forced through the edges of the recti muscles, and had there become strangulated. It was a case in which if the true condition of affairs been appreciated, the wound reopened and this mass returned, provided the intra-abdominal pressure could have been sustained, the woman's life might have, in all probability, been saved.

The second patient I will show you is a woman, forty-three years of age, who has a deformity of the right lower extremity, the result of a fracture. Six months ago she sustained a fracture in the upper third of the femur by falling on a public highway. This was adjusted in the usual manner; that is, she was placed in bed, the displaced fragments restored, so that their ends approximated as closely as possible, a Bucks' extension apparatus was applied, and a weight from the leg and heel in the direction of the

body maintained uninterruptedly during the whole course of treatment. She remained in bed for seven weeks altogether.

Now, I wish to call your attention in particular to a condition which so frequently happens, and at times cannot be obviated, as is well illustrated in this case before us. You will notice that this limb has wasted, that it has lost its mobility, that the ankle, knee and hip joints are ankylosed in varying degrees, and that there seems to be a marked disproportion in volume between the shafts of the bones and the joints. This is attributable to a wasting of the muscles and an oedematous condition of the structures in the vicinity of the articulations. There is about two inches of shortening in the affected leg. You will notice a well marked angular deflection at the seat of fracture, which will partly account for the disproportion between the length of the limbs. As I attempt motion in the articulations of the affected limb, so much pain is elicited that the patient cries out and tells us she cannot endure it. Now the question arises, what is the proper course to pursue in this case? Shall we make a section through the integument and do an osteotomy on the femur, with a view to overcoming this angular deformity? If we can make an aseptic operation and no inflammatory local reaction follows, it would seem a very simple affair to cut down, fracture the bone with an osteotome, wire its ends together and close up the wound. But, it must be borne in mind in this connection—and this is a fact important to remember—that, any sort of operative interference with the cancellous or medullary tissues of the shaft of a long bone, particularly the femur, may be, and often is, attended with most disastrous consequences to the patient, as a result of the mechanical irritation and the singular intolerance of the medullary tissues to mechanical irritation. As a rule, violent local and inflammatory reaction develops, and an amputation or resection may be, and frequently is, rendered necessary. Hence, unless the circumstances are peculiar, and the necessity for operative interference very great in these cases of deflection resulting from treatment of fractured femora, an osteotomy can scarcely be regarded as a justifiable procedure. Now, what species of ankylosis is our patient suffering from? Is it osseous, arthritic, or muscular? There is no evidence of effusion or osseous changes within the synovial capsules of any one of the three joints; neither does there appear to be sufficient inflammatory changes about the ligaments and tendons at the articulations, to have occasioned such marked limitation of motion in the joints. On the other hand, by careful inspection and tracing of the principal muscles of the thigh and leg, it is evident

from their hard contracted feeling, that the muscular tissue sheaths have become fused together, a condition which results in functional impairment.

Our efforts will be directed with the view of overcoming these adhesions by gradually applied force; and it is important always in these cases of ankylosis to exercise extreme care in the application of force; for not only in consequence of protracted fixation or immobilization of the limb have there been degenerative changes in the soft parts, but the bones themselves have parted with more or less of their elasticity and become brittle and easily fracture on the application of even moderate force. Accordingly, in overcoming the rigidity which restrains motion, extreme caution must be observed, that we do no injury to the osseous structures themselves.

The patient having been anaesthetized, the leg was grasped and used as a lever, gradual and steady pressure being made in a downward direction, and the muscular ankylosis so far overcome that the leg could be readily placed at right angles to a straight position. A free full swing was then given to the extremity.

The operator said that was all he proposed doing for the present. He would now put the leg up in a splint, apply cold application over the joint, with the view of reducing any inflammatory reaction likely to follow. In the meantime he would keep up gradual passive motion and massage from day to day, so as to prevent a recurrence of the stiffening. Should these procedures result in full recovery of the functional use of the knee, then stiffening at the hip and ankle would be dealt with in like manner.

FÆCAL FISTULA FROM UMBILICAL HERNIA— PYOSALPINX—SUB-HEPATIC AND RECTAL ABSOESS OF PERITYPHLEITIC ORIGIN.

BY R. F. WEIR, M. D.

Professor of Clinical Surgery at the College of Physicians and Surgeons, New York; Visiting Surgeon to the New York Hospital, etc.

GENTLEMEN:—I wish to show you to-day a case that will prove to you of some interest. The patient is a man, fifty years of age, who entered the hospital suffering from an old umbilical hernia, which had become strangulated a few months since. I had in this case to deal with an intestinal fistula which had resulted, and which required special treatment.

On cutting down on the hernia I found the intestines all matted together. I got rid of the adhesions, restored the intestines into the abdominal cavity, sewed up the fistula with two rows of Lambert's sutures, and subsequently closed the large umbilical opening. Though it is rather early to

state whether the umbilical hernia is cured, I know I have cured him of his intestinal fistula, and have put him into such a condition that, if there be any tendency to a return of the hernia, a proper truss will supply the defect.

The next patient that I show you is a woman thirty-five years of age, and some of you may remember the operation that was done upon her, because of certain peculiarities associated with it. She was operated upon for laceration of the cervix last summer, which was followed by a certain amount of inflammatory action, producing a very fetid discharge from the vagina accompanied with air. There was also a considerable amount of inflammatory swelling about the uterus, and it was thought we had to deal with a case of salpingitis. When she was put under ether, examination showed more trouble on the right side than on the left. I cut down in the median line of the abdomen and came upon an abscess situated in the broad ligament. As enucleation was not to be entertained, I punctured the abscess and a most fetid discharge, mixed with air, came forth from the cavity. I could not bring the walls of the abscess cavity up to the edges of the abdominal wound. I was now brought face to face with a condition of affairs that is generally found very trying. I had a very fetid discharging cavity opening up into the peritoneal cavity, which I could only hope to drain by inserting a drainage tube into the abscess; and by putting iodoform gauze around the tube, I might save the peritoneum from the risk of infection. I had so far been able to avoid anything like infecting the peritoneal cavity, so I stitched up the little wound I made into the abscess which shut it entirely off. I then put in a large drainage tube and packed it around with iodoform gauze. Twenty-four hours later the stitch was removed and the original puncture into the abscess was enlarged; the cavity washed thoroughly out and a good sized drainage tube inserted. The patient has done very well, and this I consider a good result from a very unpromising case.

The next case is one which will present some more points of interest to you. This boy was brought into the hospital late one afternoon from the out-door clinic with the symptoms of appendicitis of one week's duration. He had a temperature of 102° F., but there was no vomiting and no distinct tumor could be made out. There was greater resistance on palpation on the right side of the abdomen than on the left, and great tenderness along the course of the rectus muscle; but no distinct tumor could be made out. This was due, it was afterward learned, to the presence of a large amount of gas in the abscess.

The boy was placed under ether, and an incision was made in the usual position. A gush of air, not very fetid in character, and a great deal of pus came out as I went through the parietal peritoneum. I supposed I had opened into a perityphilitic abscess, which had had communication with the caecum through a still patent appendix, and the gas came out through that. As I made an exploration in the upper portion of the abscess I discovered a track leading upwards into another abscess. Through this I passed my finger, and then a curved scissors, and ran it up further than my finger, enlarging the opening in this way. This brought me into an abscess cavity, which extended from the liver downward. These hepatic abscesses underneath the liver are not so very uncommon, as one might suppose. I put in a drainage tube, and drained posteriorly by a separate incision the immense cavity which contained some six or eight ounces of pus. We had in this case two abscesses, one communicating with the other.

At the termination of the operation I carried out a rule proper in such cases. A number of cases have been recorded where these abscesses have opened or projected into the rectum, and as I put my finger into the rectum to a distance of about three inches from the anus, I found a projecting mass which occupied fully two-thirds of the lumen of the gut. I introduced a needle and subsequently a knife into this mass, after stretching the sphincter, withdrew considerable pus, and washed out the cavity with boiled water. I put a drainage tube into this cavity and packed around it iodoform gauze, so that no faeces could come down. This was kept in for a period of three or four days and then withdrawn. The boy is, as you see, now in good condition.

The Operative Treatment of Irreducible Luxations of the Thumb.—Dr. Montez states that the operative treatment of this trouble has attracted but little attention, and some authorities have condemned surgical interference. Dr. Montez, however, thinks that these patients should enjoy the benefits of antiseptic surgery, for the sake of improving the appearance of the thumb, even when its functions are not much interfered with. As regards the methods of operation, arthrotomy is not of itself sufficient to effect reduction, and section of the lateral and capsular ligaments has proved of no service. Resection alone is of value. The incision should be anterior and made over the head of the metacarpal bone; the periosteum and capsular sheath are detached, and the head of the bone excised. If the patient is young the periosteum should be abraded to avoid periosteal proliferations and ankylosis.—*La Tribune Medicale.*

Abstracts and Selections.

STRICTURE OF THE URETHRA AND ITS TREATMENT.

BY L. BOLTON BANGS, M.D.,
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It may not be necessary to give a definition of the pathological condition called stricture of the urethra; but, in order that, in speaking of treatment, I may be clearly understood, and that, in using the word stricture, my meaning may not be misapprehended, I would like to define stricture of the urethra as any unnatural narrowing of the urethra in any part of its whole length. At various times attempts have been made to demonstrate the normal urethra as a "closed valvular chink," with certain natural or physiological widenings and narrowings in different parts of it. It seems to me that the canal should be looked upon as a living organ, supplied with muscles and nerves for the two physiological purposes of taking away from the body the urine, and of ejecting the seminal fluid. Anything in the canal, therefore, that will interfere with the proper performance of these duties, or that irritates the nerve-relations, disturbs the harmony of the organ and must be regarded as pathological or unnatural. Whether it be deformity resulting from imperfect pre-natal development or the result of post-natal disease, it occupies the same place in relation to the natural conditions of the organ. It is, then manifest that to arrive at a clear conception of an obstructed urethra its normal state must be appreciated, and, therefore, each urethra must be studied by itself.

When a large number of urethrae are examined and compared with each other, it will be found that they all present one characteristic, not only in adults but also in infants, namely, that the portion described by anatomists as the bulbous portion is the largest in caliber, or, in other words, capable of the greatest degree of physiological distension. What the precise object of this is I am not prepared to state, but it undoubtedly has some physiological purpose in relation to the function of the urethra. From its position, shape, and muscular contractility it has seemed to me that it serves as a sort of machine for duplicating or reinforcing the action of the bladder and posterior urethra in ejecting the normal fluids. It is evidently not to be regarded as determining the caliber of the spongy portion of the urethra, for it narrows gradually (though in some individuals suddenly) to the commencement of the spongy portion, which is the barrel part, so to speak, and its size is the *caliber* of that urethra. Although efforts have been made to describe narrowings of the urethra

in its penile portion as natural contractions, and therefore not strictures, because they are frequently found at or near the same point, from a careful study of a great many urethrae I am compelled to conclude that when present these narrowings are actually, practically, strictures in the sense in which the term is defined. In this I am confirmed by the result of treatment. Moreover, these narrowings are not found in every individual, nor in enough persons to form a rule. Over and over again I have examined urethrae that presented no narrowing of the slightest degree after the urethrometer had left the bulbous urethra and the normal physiological distensibility of the penile urethra had been determined. For example, we will suppose that the index of the urethrometer in the bulbous urethra points to the figures forty. At this number the instrument is withdrawn, say from an inch to an inch and a half, gradually being turned downward till the hand on the dial-plate indicates 32 Fr., when it is withdrawn smoothly, easily, and painlessly until it reaches the meatus, where we will say, for example, it is necessary to turn it down to 30, 28, 26 or 24, as the case may be. This urethra, then, I would regard as a normal one, provided, of course, that the posterior urethra was also found to be free from stricture. On the other hand, I have examined large numbers of patients, and have found a narrowing of varying degree in the situation claimed to be normal, say at a point two and a half or three inches from the meatus; having incised this band I have observed the symptoms to disappear, or have been enabled to cure a persistent gleet that, prior to the operation, had resisted all forms of treatment. Was this band normal or abnormal? I regard it as abnormal, and to be classed among strictures of large caliber.

Since the vigorous enunciations of Dr. Otis I think there is no difference of opinion in the minds of most genito-urinary surgeons that there is a class of strictures, chiefly to be found in the penile urethra, known as strictures of large caliber—that is to say, varying in size from 18 Fr. and upward, anything below that being classified as strictures of small caliber; and the latter may, of course, vary from the size named down to filiform, or even impassable strictures. Under some conditions of vigorous contractile quality, or under some condition of urethral irritation, strictures of large caliber may become of small caliber, and hence it is important that they should be recognized; but the majority of them rarely show a tendency to much contraction. When they give rise to symptoms, these are usually indicative of an irritant either to the mucous membrane, producing and maintaining catarrh; or to the nerves, producing various symptoms, direct or indirect.

Of course, many with strictures of large caliber may go to their graves without ever developing any symptom requiring treatment; and conversely, there may be men with symptoms of stricture of large caliber, who may have those symptoms relieved by other means than by operating upon the stricture. But by what factors is the immunity of the latter happy individuals to be determined? I know of no other answer than by good judgment that comes from large experience and careful examination of each case. Not only must the normal size of the urethra and the relative degree of contraction be determined, together with the effect of the latter upon the function of the urethra and bladder, but the pathological status of the mucous membrane must be ascertained by ocular inspection.

How important then that all fixed, arbitrary standards should be discarded, and that each urethra should be considered and studied by itself. I, therefore reaffirm my belief in the proportionate relation of the human urethra to the size of the penis in which it is contained, and of the necessity that only by recognizing this principle formulated by Dr. Otis can we determine how to give radical and humane treatment for an infirmity that concerns so many.

The degree to which a stricture will ultimately obstruct the urethra or interfere with its function is determined not merely by the amount of cicatricial contractile deposit caused by the original urethritis, but by the degree in which this deposit acts as an irritant to the urethral tissues. This may be learned, I think, by observation and by the results of treatment. By bearing it in mind we are enabled to make a stronger argument in favor of that means of intervention which, while it aims to relieve or cure the stricture, will irritate the fabric of the urethra in the least degree. For instance, I have seen within the urethra a nodule as large and as abruptly defined as a hazelnut, that had persisted for nearly two years, notwithstanding electrolysis and gradual dilatation, but which was entirely relieved and finally disappeared absolutely after one incision by internal urethrotomy. The deduction seems to me to be plain that the stricture began and the treatment itself kept up a sort of chronic inflammation that maintained and augmented the size of this nodule. After thorough division of the stricture, and maintenance of the separation of its sundered extremities, the functions of the urethra were performed easily, less nutriment was required by the tissues, and the abnormal growth ceased.

The part of the surgeon is not only to divide the strictures, but so far as possible to restore the healthy function of the organs. My convictions in regard to treatment may be briefly stated.

As a witness of the effects of divulsion, in regard to which considerable has of late been written, I cannot but withhold my belief in its advantages. The effect of the operation is an unknown quantity. The operator does not exactly know what he is doing. The effect of the instrument is distributed more or less beyond the strictured areas, and the resulting cicatrix is an irregular and oftentimes violently contracting one. It is non-surgical, non-scientific.

Electrolysis may be dismissed in a few words. When a current is used of sufficient strength to have any effect upon the tissues at all it acts as an irritant, produces inflammatory deposits, and the subsequent condition of the patient is worse than the first. I have had numerous patients coming to me with nodular strictures, who had submitted to operations by the disciples of electrolysis, and the strictures were exceedingly difficult of treatment.

Gradual dilatation is sufficient for soft, non-fibrous strictures of the posterior urethra and of those of similar pathological structure in the bulbous urethra. It is also sufficient in some of the soft, not well-organized strictures in the penile urethra that are practically but simple *adhesions* (?) of the surfaces of the mucous membranes; but for the organized strictures I believe that some form of urethrotomy is preferable.

For all strictures of large caliber *requiring interference* I advocate treatment by internal urethrotomy and thorough division, with as little cutting as possible, by means of an instrument that fixes and makes tense the stricture-tissue. The subject of strictures of small caliber demands closer differentiation. For simple, uncomplicated strictures, internal urethrotomy as already described is the remedy. If, however, the stricture is complicated by fistulæ, either in the penile urethra or in the perineum, or if there be indurated cicatricial deposits posterior to four and a half inches, I would advocate external perineal urethrotomy in conjunction with internal urethrotomy. The former serves more than one purpose. It enables us to divide all stricture-tissue thoroughly and fearlessly, with a definite object in view, and enables us at the same time to abrogate the functions of the diseased urethra by draining away the urine, drop by drop, without any effort on the part of the urethra or perineal muscles. Thus physiological rest to the whole region is obtained as certainly as we obtain physiological rest for a broken limb when we put it on a splint. The process of healing is rendered a continuous and uninterrupted physiological one, without at any time becoming an inflammatory or disease process. Even in cases that have enormous, hypertrophic, indurated masses in the perineum, scrotum, and neighboring tissues—

masses that are the result of tight or filiform strictures in the bulbous or membranous urethra—the effect of this drainage will be seen in the softening and gradual disappearance of these hypertrophies, sometimes before the perineal wound has begun to heal.

It seems to me that this principle of external and internal urethrotomy, combined with prolonged perineal drainage, holds good even in cases in which there are evidences of commencing renal degeneration. The result of my experience is that, when I have been obliged to take the responsibility of operating upon patients with tight strictures of the urethra, whose kidneys were in a condition of degeneration, these organs have been immediately relieved of a certain amount of "back-pressure," so to speak. They have resumed their function, as manifested by the diminution of albumin, the disappearance of casts, and by the improved general well-being of the patient. Nor do I think that the life of the patient has been in the least degree jeopardized by the procedure indicated. On the contrary, patients whose existence would have been placed in peril by the slower process of gradual dilatation, have from the commencement of the perineal drainage shown evidences of rapid recuperation of health. The condition of the patient under these circumstances is certainly rendered perilous by the delay that of necessity is associated with the slower method. The danger is in the condition of the patient antecedent to the operation, or in the conditions that necessitate its performance, not in the operation itself.—*Medical News, Dec. 12, 1891.*

THE TREATMENT OF RUPTURE OF THE BLADDER.

BY A. J. CABOT, M. D.

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In an instructive paper read before the American Association of Andrology and Syphiliography, the author concludes as follows:

(1) When an intra-peritoneal rupture is made out, an immediate laparotomy, with suture of the bladder wound and subsequent drainage of the bladder should be done.

(2) When a reasonable doubt exists as to whether the rupture is intra-peritoneal or not, an immediate laparotomy should be done.

(3) If an extra-peritoneal rupture is made out, and uncertainty exists as to the direction in which the urine is extravasated, a laparotomy should be done for exploration to ascertain how the drainage may best be placed.

(4) In the case of fracture of the pubes with evidence that urine is extravasated in the prevesical

space, an incision should be made in the suprapubic region, a tube should be carried to the bottom of the effusion, and a median or lateral lithotomy should be done for drainage of the bladder.

Exception. Occasionally, in cases of severe injury with much shock, when a long operation could not be borne, a median lithotomy may be hastily done for drainage, and the opportunity may be taken for exploration of the position of the rent, to serve as a guide for further interference in case the patient rallies sufficiently.

In short, a laparotomy should be done in all cases of bladder rupture except those that come under Rule 4, or those of such severity that they cannot bear more than the median operation.

These rules designed for the furtherance of early operations are only intended to apply to cases seen in the early stages. After the first few days, if the patient survives, other indications may arise to guide the operator. The urine effused may be seeking the surface at some point, and the surgeon's duty is then to open the urinary abscess, and to provide drainage for it and for the bladder.

Rule 1 embodies the already established practice. If Rules 2 and 3 are accepted, they will encourage early operations in cases where, if exact indications were waited for, the operation would probably be done too late.

Lastly, comes the question of where to make the incision, and how to place the tubes for the best drainage of effusion in different parts of the pelvis. If the effusion is in front of the neck of the bladder, and the opening has been made into it by the suprapubic incision without opening the peritoneum, the bottom of the effusion should be sought with the finger, and a drainage-tube carried down to it.

In opening the bladder for drainage in such a case it may be worth while, if there is evidence that the effusion is making its way backward, to make the lateral perineal cystotomy rather than the median, because in the lateral incision the parts about the neck of the bladder are more freely opened, and if the urine finds its way in that direction, it is afforded a sufficient outlet. By the median operation, unless the incision is carried back into the prostate, there is danger that the parts behind the triangular ligament will not be thoroughly laid open, and that any urine which found its way in that direction might not freely escape.

When, as so often happens, the effusion finds its way along the loose tissue on the side of the pelvis, and as in the case reported in this paper, up along the iliac vessels towards the renal region, perhaps no better incision can be chosen than that which is used for tying the common iliac vessels. In order to give the

most direct drainage, and at the same time not to have any more pressure from the tube upon the iliac vessels than can be helped, the incision had better be made rather more towards the median line of the abdomen than is usually done for tying the iliac artery. In this way the tube goes down more directly, and does not make so sharp a bend where it dips into the pelvis over the vessels. If, however, the effusion has already reached up behind the peritoneum, above the brim of the pelvis, the incision must be made further out near the anterior superior spine of the ilium in order to give the best drainage. The finger introduced from this region can penetrate quite readily over the brim of the pelvis, and well down behind the bladder, while the peritoneum separates so easily that a considerable channel can be made, through which the sloughing connective tissue can afterwards discharge itself. Ordinarily, these anterior openings afford tolerably satisfactory drainage for pelvic abscesses, as the intra-abdominal pressure is sufficient to force out the pus even through an unfavorably placed opening.

In any case in which a suppurating cavity has formed in the bottom of the pelvis, which does not drain satisfactorily through an anterior opening, it is perfectly possible to reach it, and give it good drainage, by adopting the incision usually employed for excision of the rectum, and removing the coccyx and one side of the lower segment of the sacrum. Such a incision as this, which bears the name of Kraske, who uses it for the excision of the rectum, gives thorough access to the lower part of the pelvis, and would give excellent dependent drainage in case of an abscess which was burrowing in that region, and which did not sufficiently discharge itself through the more anterior openings.—*Boston Medic. and Surgic. Journ.*, Oct. 15 1891.

IMPERFORATION OF THE RECTUM.

BY GEORGE BEN JOHNSTON, M.D.

AUTHORS differ as to the frequency of imperforation of the rectum. Its occurrence is variously estimated at one in from five to fifteen thousand births. That it is likely to be met with in any confinement, and upon its prompt recognition and intelligent treatment depends a life, is sufficient warrant to invite your attention to its varieties and their treatment.

The manner of development of the recto-anal canal answers for the diverse forms in which malformation occurs. It is by no means uncommon to find associated with this deformity other evidences of lack of

development; notably, spina bifida, a contracted pelvis and extroversion of the bladder.

In the first class of cases the anus is simply closed by skin or mucous membrane of variable density. The rectal pouch is not far removed from the perineum, and is commonly well formed.

The sphincter is ordinarily present, and the anal site is marked by a dimple or irregularity in the skin.

In the second variety the depth to which the rectal pouch descends into the pelvis is an unknown quantity. It may terminate near the skin, or it may end higher up, and the intervening space be filled with cellular tissue, or an impervious cord.

In the third form the rectum and anus may be kept apart by a bulkhead, or partition, more or less thick, or one or the other of these blind tubes may be diverted to a neighboring organ, as the vagina or bladder.

The fourth, or last, variety is only an exaggerated example of that form in which the rectum terminates before reaching the ascending anal portion of the gut and leaves a complete gap between the sigmoid flexure and the perineum.

Diagnosis is usually not difficult. Many symptoms are common to all the forms described. The most pronounced or noticeable symptom, and the one to which the attendant's attention will at first be drawn, is that of obstruction. The child passes no meconium nor gases. Pain, restlessness, refusal of the breast, wakefulness, crying and violent straining, distension of the abdomen, and later, stercoreceous vomiting, point to obstruction.

When such a state of affairs appears, a closer inspection must be made. If the malformation is of the first or second variety, a simple inspection will disclose the barrier. On the other hand, if the third class exists, a thorough exploration should be prosecuted; for here, to all outward appearances, there is no deficiency, and not until the well oiled little finger or a female catheter is introduced through the anus will the occlusion be discovered. We may, with some degree of certainty, rely on physical signs to enable us to form an idea as to the extent of a given malformation. Thus, if in the first variety, the anal site is seen to bulge, and if it impart to the finger a distinct impulse when the child coughs, or when it fluctuates, we may reasonably assume that the membrane shutting the rectum is thin, and that the rectum itself is perfectly formed. The same state of affairs existing in the third form leads to a like conclusion.

When, however, there is no anus no bulging of the perineum and no fluctuation, nothing but the scalpel will reveal the extent of the deficiency. It is of the highest importance that an early diagnosis

should be made, for changes inimical to the infant's life soon supervene. Peritonitis, septicæmia, or rupture of the colon will, one or the other of them, soon inevitably appear to end the sufferings of the little unfortunate, unless surgical relief is afforded. Nature, it must be remembered, does nothing for these cases. The treatment of such deformities is always surgical, and its success or failure depends upon the extent and variety of the malformation, and the promptness and skill with which it is applied.

In a simple case of skinning over of the anus, nothing is required beyond an ample cruciate incision through the membranous obstruction. A free escape of meconium follows. The opening should be kept dilated by the occasional introduction of the tip of a little finger. The "tabs" of skin left by this proceeding may be trimmed off, or left to be absorbed.

Where an anus exists and a diaphragm keeps the descending portions of the gut apart, this is divided and dilated and continuity of the tube thus established and preserved.

When no anus is present, or where the rectal end of the gut does not readily reveal itself through a well formed anus, a more careful search is to be instituted. An incision is made in the raphé, extending from the root of the scrotum to the tip of the coxæ. This is to be slowly and carefully carried deeper into the pelvis trending toward the hollow of the scrotum, until the hidden pouch is reached or until it is no longer safe to cut farther. This procedure should be prosecuted with the greatest caution, for the meagre dimensions of the infantile pelvis will not afford much space to work in, and, moreover, recklessness might lead to disaster to some important organ. If need be, removal of the coxæ may be resorted to, in order that the field of operation may be enlarged and the chance for ultimate success enhanced. It is never safe to carry this incision of search beyond an inch and a half in depth. Should the rectum not be reached within this limit, it is wiser to abandon this undertaking and seek another field, wherein an artificial anus may be established. Should we be so fortunate, however, as to encounter the undescended bowel, its extremity must be well freed by dissection from its moorings and drawn down and strongly stitched to the skin. This is absolutely required; for to simply open the gut and depend on a canal made by the scalpel, is but to court failure. To prevent cicatricial contraction, it is positively necessary that the tract throughout should be lined by mucous membrane. When after a painstaking search with the scalpel, the gut has not been discovered, abandon the search with-

out inflicting further mutilation on the pelvic space, and thus complicate a second, and even graver, operation.

Above all, do not stab blindly with the trocar or exploring needle in the vain hope of striking the gut. Irreparable injury may follow such an exploit. When an intelligent and ample trial to reveal the hidden gut through the perineum has failed, a colotomy must be resorted to at once. Where shall it be? Littré says in the left groin; Amussat, in the left loin behind the peritoneum, while Hugier insists on the right groin.

Each of these sites has its advocates. The consensus of opinion, however, of recent authors is vastly in favor of the left groin. The selection of this point seems far more rational than either of the others, for reasons that are apparent.

It is not within the scope of this paper to discuss the methods of performing the colotomy. A colotomy for imperforation of the rectum will not differ from other methods of colotomy for other obstructions, and should be performed in the usual way.—*Medical Age*, Dec. 10, 1891.

OBSERVATIONS ON, AND A SUCCESSFUL CASE OF COMBINED PYLORECTOMY AND GASTRO- ENTEROSTOMY FOR CARCINOMA OF THE PYLORUS.

BY F. BOWREMAN JESSETT, F.R.C.S. ENG.
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ELLEN G. æt 38, married, was admitted into the Cancer Hospital Brompton, under my care on July 25, 1891, with symptoms pointing to pyloric cancer. The night before the operation, the stomach was washed out with a weak solution of salicylate of soda and water. In the morning she was given a beef tea and brandy enema, and half an hour before the operation an enema of beef tea and brandy was administered. When the patient was on the table a hypodermic injection of 1-80 gr. of atropine was given.

Operation.—An incision three inches long was made in the middle line from the umbilicus upward through the abdominal parietes, which were so very thin that the peritoneum was cut down upon directly, and no bleeding points required catching. The peritoneum was divided the whole length of the parietal incision, and caught in three places on each side with pressure forceps. The tumor in the pylorus was seized and readily brought out through the wound; it being found to be perfectly free from all surrounding organs, I determined to remove it. A cloth wrung out in warm carbolized water was

packed round the growth, which was found to extend for about four or five inches along the walls of the stomach, I next with an aneurysm needle armed with No. 1 chromic gut, ligatured the vessels running along the larger and smaller curvatures of the stomach, a little to the left of the point at which I proposed to make the section, and with a pair of broad ligament forceps I clamped that portion of the stomach on the duodenal side of the proposed section. I then tore through with my finger the lesser omentum, and, Mr. Elam firmly holding the stomach, I proceeded to cut it across between his fingers and the clamp forceps with scissors, catching up each bleeding point as it was divided with pressure forceps. The growth with the pylorus, being thus severed from the stomach, was allowed to hang loosely out of the wound, covered with a cloth soaked in warm carbolized water. The vessels in the divided edges of the stomach were now quickly ligatured with catgut, and as it was found that there was a quantity of fluid in the stomach, this was carefully syphoned off by means of a rubber stomach tube and washed out. The edges of the stomach were next united by means of a continuous chromicised catgut suture, passing through all its coats. A second line of quilt sutures of No. 1 chromicised catgut were now passed through the serous and muscular coats about an eighth of an inch from the edges; the ends of each pair of these sutures when passed were secured by clamp forceps, to allow of all the sutures being inserted before tying. Nine of these sutures were introduced in all; as each of these were tied, care was taken to thoroughly invert the cut edges of the stomach, so as to ensure a good surface of peritoneum being approximated. When all of these sutures were tied and the union appeared complete, I allowed the stomach to drop back into the abdomen. I next passed an india-rubber ligature lightly around the duodenum about two inches from the pylorus, and clamped that portion of the duodenum close to the pyloric orifice with forceps and divided it between the forceps and the elastic ligature, leaving as much of the duodenum as I could with safety. The pylorus and growth were now free excepting at their attachment to the great omentum.

This I transfixed with No. 4 Chinese silk and ligatured in the same manner as an ovarian pedicle, and removed the growth by cutting the omental attachment across with scissors. The divided end of the duodenum was then united by means of a continuous chromicised catgut suture passing through all its coats and a second row of quilt sutures of No. 1 chromicised gut, in the same manner as that described for the union of the divided end of the stomach, and allowed to drop back. The rubber

ligature was now removed from the duodenum, a sponge was introduced into the cavity, and the first part of the operation thus completed. I then proceeded to perform gastro-enterostomy. I first pushed the transverse colon and omentum over to the right, and passed the index finger of my right hand over it, and caught up a loop of the jejunum close to its origin, and drew it out through the wound. The stomach was again withdrawn, and an opening made into it about an inch and a half long, parallel to and about an inch from the greater curvature, and two inches from the divided end. A decalcified bone plate threaded with two lateral chromicised catgut ligatures and two longitudinal No. 1 silk ligatures was introduced. The lateral ligatures were passed through all its coats about an eighth of an inch from the divided edge, these were given to an assistant to hold, while I proceeded to introduce a similar bone plate into the jejunum. Before doing this two india rubber ligatures were passed round the intestine almost four inches apart, and fastened tightly. An opening in a longitudinal direction, about an inch and a half in length, was made on the convex surface of the jejunum between the india-rubber ligatures, and a bone plate introduced, the lateral catgut sutures being passed through all the coats of the bowel. The two plates were now held in accurate apposition by Mr. Elam, while I tied the corresponding ligatures of the two plates. In tying the upper lateral ligatures a considerable portion of mucous membrane prolapsed and was with difficulty got into place, so I cut it off with scissors, after which the upper edge was readily made to go into its proper position. A row of quilt sutures, five in all, were introduced along the upper edges and ends of the plate, and the parts being thoroughly cleansed, were dropped back. The sponge which had been placed in the cavity, left by the resection of the pylorus was removed, and, all being dry, the abdominal wound was closed with silk-worm gut sutures in the usual manner, the wound dressed with sublimate gauze, and a large pad of wool and a many-tailed bandage firmly applied.

The author then presents the following conclusions:

1. It will be obvious that the pylorus may be excised with safety in favorable cases; but the surgeon should be careful not to attempt its removal without it is quite free from adhesions to neighbouring important organs.

2. In cases reduced by disease, as patients suffering from pyloric obstruction invariably are, the operation that can be performed in the shortest time must be the best, provided it can be performed with equal precision as the more lengthy operation.

3. The attempt to suture the divided ends of the stomach and duodenum by means of sutures should never be attempted. In favorable cases, where there is but little traction upon the divided ends, these can be united by means of approximation discs.

4. In all cases where the pylorus can be excised without interfering with neighboring important organs, it may be removed by adopting the combined operation of gastro-enterostomy with the pylorectomy. In cases where excision of the pylorus is inadmissible gastro-enterostomy should be performed.

5. Great importance must be laid upon the suturing of the divided ends of the stomach and intestine, and the only safe suture is the quilt, or square suture, adopted by Halsted and myself. In each case that died from the result of the operation, the failure was found to arise from faulty suturing. Lembert sutures are apt to cut through, and should not be relied upon.

6. The omental attachment of the pylorus should be tied *en masse* by transfixing and ligaturing in the same manner as an ovarian pedicle.

7. Gastro-enterostomy should be performed by means of decalcified bone plates, and for the sake of security four or five quilt sutures, should be placed around the upper edge and two ends of the plates.

8. The jejunum should be caught up as near to its origin as possible, and a loop applied to the front of the stomach so as there shall be no traction upon it; at the same time it is important not to allow too much slack on the proximal side of the junction.

9. On no account is it permissible to catch up the first loop of the intestine that presents itself, as by so doing, although the operation may be successful the surgeon may find, to his chagrin, that his patient gradually loses flesh and dies in the course of a few weeks of marasmus. At the post-mortem examination it will be found that the loop of intestine secured to the stomach is only a short distance from the ileo-caecal valve.

10. The opening into the stomach and intestine should be at least an inch and a half long, and should the mucous membrane protude it should be cut away. By adopting this course I think all fear of closure of the opening will be prevented.

11. The patient should be fed by mouth early, in fact the same day, warm water may be taken, and the following day peptonized milk in small and repeated doses.

12. The patient should on no account be allowed out of bed for at least ten days to a fortnight.—*Med. Press and Circ.*

A FEW DETAILS IN THE OPERATIVE TREATMENT OF INGUINAL HERNIA.

By WILLIAM ROSE, M.B., B.S., F.R.C.S.

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In noting some of the details of the operation, we naturally attend in the first place to the *preparation of the patient*. The most scrupulous care must be taken to purify the skin of the groin, scrotum, and penis: the prepuce should be thoroughly retracted, and the corona exposed and cleansed. Lister's mixture (*i.e.*, a solution of 1-500th part of corrosive sublimate, in a 1-20 carbolic solution), can be advantageously employed. Prior to this the pubis should be shaved on both sides, and the parts well washed with soap and 1-20 carbolic. The patient should be previously purged, and the lower bowel washed out by an enema, as an action of the bowels is not desirable for four days after the operation.

The line of incision is best made in the direction of the inguinal canal, that is to say, commencing a little internal to the position of the internal abdominal ring, it is carried downwards and inwards to a point midway between the pillars of the external abdominal aperture. The superficial external pudic vessels early come into view, and should be secured by Spencer Wells' forceps and divided.

Identification and Separation of the Sac.—The coverings of the cord are successively cut, the fibres of the cremaster serving as a useful landmark. The cord is then lifted from its connections, and the sac searched for. If the hernia is large, the sac is usually somewhat thickened and readily seen; but in most recent ruptures, and especially in bubonoceles, it is thin and delicate, and is not so easily found. The best method to employ in searching for it, is to use the fingers in separating the layers of connective tissue, or two pairs of dissecting forceps, one in each hand, when the fundus of the sac, in a case of acquired hernia will be discovered as a slight fold, or as a white convex line, which, with a few light touches of the knife, can be clearly defined. The gliding of the two layers of serous membrane over one another, when the structures of the cord are rolled between the fingers, is another useful help in discovering the sac.

Its complete isolation is the next step to be proceeded with. The opinions of surgeons differ as to the advisability of this, but my own experience is certainly in favor of its complete removal. It is stated that interference with the vessels and nerves of the testicle is liable to lead to subsequent trouble from inflammatory or trophic disturbances, but unless great

carelessness or rough handling be employed in the proceeding, this ought not to be the case. In a complete acquired hernia, the sac may reach to the level of the head of the epididymis, and is quite independent of the tunica vaginalis, but in the *congenital* variety, the funicular process and tunica form one cavity into which the protruded viscera pass. The treatment of this condition consists not only in isolating the sac, but also in the formation of a new closed tunica. The separation of the sac is here often more tedious and difficult than in acquired hernia, as the structures of the cord are more intimately adherent, but with patience it is possible to accomplish this satisfactorily. The sac is then divided below, after clamping with Spencer Wells' forceps, and the opening in the tunica closed by a continuous catgut suture. The upper portion in the grasp of the forceps is then completely dissected up clear of the vas and other structures of the cord to the level of the internal abdominal ring, and treated in the manner indicated below. An uncommon variety of inguinal hernia, is the so called *infantile*. In this the sac is found either invaginating the funicular process, which has remained unclosed, except at the internal abdominal ring, or else passes down behind it. In either condition, the surgeon first opens into the cavity of the tunica vaginalis, lax or distended with fluid, and this is found, only to pass downwards into relation with the testicle, having no communication with the peritoneal cavity. The posterior wall of this should then be opened, and the true sac sought for behind it, and treated as in an acquired case. The opened tunica should be subsequently stitched up close over the testicle.

Treatment of the Contents.—When the hernial contents are completely reducible, and the hernia acquired or infantile, it is usually unnecessary to open the sac before its neck is transfixed, but in congenital or irreducible herniae, the sac must of necessity be opened at an early stage, in the former, to construct the new tunica, and in the latter, to liberate and deal with the adherent contents.

Treatment of Omentum.—Where omental tissue has been for any length of time protruded into or adherent to any part of the sac, considerable alteration takes place in its structure. The fat becomes granular and the connective tissue indurated, so that it is neither possible in many cases or desirable in others that it should be returned. In order to remove it, healthy omentum should be pulled down from above, the vessels ligatured in detail, the protruded mass cut off below the ligatures, and the stumps after careful examination, gently returned into the abdomen. It is not advisable to ligature the

omentum *en masse*, except when a very small portion is concerned, and the reasons for this are:

- (1) That the occlusion of the vessels cannot be assured so certainly when a large mass of tissue is included in the ligature.
- (2) That the ligature is more likely to slip from contraction of the stump.
- (3) That a stouter ligature will be needed for this purpose, which is undesirable.
- (4) That the size of the stump interferes with its easy passage through the neck of the sac into the abdomen ; and
- (5) That the gathering up of the mass form pockets, between the folds of which intestines may subsequently pass and become strangulated. Moreover, considerable abdominal pain and discomfort is often set up.

The best method of ligaturing the omentum, is to take up each vessel separately with a small portion of omental tissue, passing forceps or an aneurysm needle gently through, and using very fine catgut. It is as well to keep hold of the mass with Spencer Wells' forceps to prevent its slipping back into the abdomen before one is certain that all the vessels are secured. Where omental adhesions exist within the neck of the sac, it is not safe to detach them, from fear of tearing across a large vessel in a position not easy to secure ; under such circumstances, it is best to include the adherent portion in the transfixion of the neck of the sac, taking care to ascertain that no adherent bowel is also present.

Treatment of Adherent Intestine.—This condition is not commonly met with in inguinal hernia ; however, the following forms are seen :

1. Adhesion of omentum and intestine preventing reduction.
2. Adhesion of the intestine to some part of the neck or interior of the sac.
3. Adhesion of one coil of intestine to another.

Each of these conditions requires a short separate notice. As to the first variety, in separating the intestine from the omentum, it is best to leave a small portion of omental tissue in contact with the bowel, and not to force the adhesions through, or in this way the peritoneal coat of the bowel may be torn, and troublesome hemorrhage from the vessels in the muscular coat may arise.

In the second form the greatest care must be taken to separate the adhesion, and any tear of the peritoneal coat must be carefully sewn up. Should it unfortunately happen that the bowel is very firmly adherent to the sac at one point, this portion of adherent sac should be separated from the deeper parts and from the surrounding tissue, and left attached to the bowel. All unnecessary material

should be carefully removed, and when all hemorrhage has stopped, the intestine, together with the portion of adherent sac, may be returned into the abdomen.

In the third variety, equal care should be taken in freeing the adhesions, and no unnecessary violence employed; at the same time, the attempt should always be made to free the separate coils and all hemorrhage should be stopped before reduction.

Treatment of the Sac.—The obliteration of the peritoneal process into which the hernia descends is the object in view, and this, I believe, is most surely attained by transfixing and ligaturing the neck of the sac above the level of the internal abdominal ring, and cutting it off below this, so that the infundibuliform condition, as looked at from within, will be changed into a puckered elevation. In order to accomplished this, the sac freed from its connections (special care being devoted to the vas) is pulled down and transfixed by a needle which is somewhat blunt, so as to push aside vessels rather than puncture them, and threaded by means of an eye near the point with stout catgut or silk carefully purified. The needle is withdrawn after seizing the ligature with forceps and drawing it out single. It is then passed around one half of the neck of the sac and tied; the ends are then carried around the other half and tied again, and as an extra precaution the whole neck may be encircled once more, and a third reef or surgeon's knot applied. The ends are then cut short, and the sac removed a little below the site of ligature. The point of transfixion should be such that when the sac is removed and tension relaxed, the ligatured neck lies above the level of the internal abdominal ring.

The Treatment of the Inguinal Canal.—The use of silk, catgut and kangaroo tendon, formerly so much in vogue for the purpose of bringing the sides of the inguinal canal into close apposition has been superseded more or less by the employment of silver wire, which is much more satisfactory. A greater confidence in antiseptics enables us to make use of this valuable agent as a permanent means of closure of the canal, the sutures being left *in situ* in the tissues. The great advantage of the wire is its insolubility, and hence it is likely to produce a more effectual barrier than any other. The way in which it is introduced is as follows: The left forefinger being passed into the canal, and the structures of the cord being carefully drawn to the outer side, the conjoined tendon should be carefully defined and the finger worked gradually beneath it. If the thigh is flexed by raising the knee, this manœuvre is much facilitated. Wood's hernia needle, warmed, is now passed through the inner pillar of the ring and conjoined

tendon from without inwards, until the point impinges against the index finger at a spot corresponding to the upper border of the internal abdominal ring. Inasmuch as the size of the ring varies, the position of this suture should be also variable. The point of the needle is then made to protrude through the external ring, the tissues of the cord being kept to the outer side and behind it, and threaded with a piece of well annealed silver wire of gauge No. 21, and about 6 inches long, which is drawn into the canal as the needle is withdrawn. The outer side is now dealt with in a similar way, viz., by passing the finger under the outer pillar and Poupart's ligament, care being taken of the vas and other structures of the cord by drawing them well inwards. A similar suture may be necessary at a point lower down, and when the ring is large, even a third may be needed. In this way, the sutures are passed in front of the cord and its constituents so that when twisted and tightened up, the latter lie behind out of harms way. The lowest suture must not be placed too near the pubic spine, or else the external abdominal ring will be narrowed too much, and the cord injuriously constricted.

Treatment of the Wound.—Having ligatured any vessels, and removed the spermatic veins, if enlarged or varicose, the wound should now be well washed out with carbolic lotion (1-40). Irrigation with the same lotion should have been also maintained at intervals during the operation. The skin incision should then be brought together with a continuous catgut suture, and, if necessary, a small superficial drainage tube fixed in the lower part of the wound. The object of the tube being merely to allow of the escape of blood and blood stained serum from the wound, thus preventing tension, it need not be retained beyond 24-48 hours, its removal necessitating an early dressing of the wound. But latterly I have dispensed with the tube, where I was satisfied that complete haemostasis had been obtained and have availed myself of sponge pressure by inserting a flat, purified sponge between the second and third layers of the gauze dressing. The dressing need not then be touched for a week, if there be no local or constitutional disturbance; at the end of such time the stitches may be removed, and a collodion dressing adjusted to protect the young cicatrix. It is important that the scrotum should be well supported at the first dressing, and particularly when there has been much interference with the structures of the cord, as in removing an old and thickened hernial sac; if this is not attended to, extravasation occurs into the scrotal tissues, and the testicle is liable to become swollen and painful.—*Med. Press.*

THE TREATMENT OF ILEUS—THE TREATMENT PERITYPHLITIS.

BY DR. KOERTE, BERLIN.

THE author (Berlin. Klinik, Hft. 36, 1891) distinguishes two main groups of this condition :

1. Cases where the integrity of the intestine is threatened by obstruction of the circulation in consequence of internal strangulation, torsion, invagination, etc. 2. Cases where there is no direct danger of gangrene of the intestinal walls (ileus from foreign bodies, tumors, strictures), etc. The latter cases run a slow course, and the dangerous symptoms develop late in the disease, as a result of stagnation and decomposition of the intestinal contents and gangrene of the gut. In the first form, the interference with the circulation, and the severe changes in the intestinal walls give rise to violent symptoms, similar to those observed in strangulated hernia, such as vomiting, pains, and shock. If it is possible to make a differential diagnosis between both groups, then the indications for treatment are more obvious. In the chronic cases an expectant plan may be pursued, consisting in the administration of opium, restriction in food, washing out of the stomach, enemata; surgical measures are reserved for the last stages. In acute, strangulation-ileus, however, it is hazardous to delay operative interference on account of the danger of necrosis of the intestinal walls.

The author reports three cases of ileus, in which after the use of opium the violent symptoms subsided. He has found that a commencing peritonitis frequently is unattended with distinct symptoms. He describes three cases of intestinal obstruction from gall stones, of which one recovered after operation, and two died ; of the fatal cases, one was treated by operative measures. Six cases of ileus (three from stricture, one from volvulus at the iliac flexure, one from tumor, and one from a pelvic exudate), recovered under internal treatment, which is, however, only useful when the obstruction is capable of soluception. If firm strangulation, volvulus or intussusception exist, operative interference is absolutely necessary.

Laparotomy is more dangerous in ileus than in other conditions. It is important to select the proper time, to employ strict asepsis, to operate rapidly, and to take every precaution to avoid injury of the intestines.

If peritonitis and gangrene are present, the prognosis is very unfavorable; under these circumstances enterostomy and suture of the perforated section of

intestine to the abdominal wound is the best procedure; a secondary resection is to be preferred.

In conclusion the author emphasizes the value of internal treatment, on the ground of his own observations, but recommends surgical intervention in cases of strangulation, as soon as the diagnosis is made. Our chief aim should be to learn to recognize those cases which demand speedy operative treatment.

In another article Dr. Koerte presented his views on the treatment of perityphlitis, (Prager Medicin. Wochenschr., No. 38, 1891). He regards surgical interference in this disease as indicated : 1. In acute diffuse perforation peritonitis: 2. In sacculated peritoneal abscess. 3. In retroperitoneal abscess. 4. In recurrent chronic perityphlitis. As regards cases of perforation peritonitis, it is in the diffuse, suppurative progressive forms that the surgeon is sometimes able to save life, as Mikulicz has shown. The author has operated on three such cases, with one death; the operation in the fatal case was performed in extremis at the urgent request of the patient. At the autopsy, it was found that recovery in this case might have been possible, for both the abscesses which had been opened were found completely emptied of their contents. There was, however, a third abscess situated between stomach and diaphragm, which it would have been difficult to drain, and this gave rise to the patients' death. Of the other two patients, the one, a woman, had been cured, with exception of a superficial wound; the other, a young man, aged eighteen years, appeared to be on the road to recovery. As regards the technique of operation the author is opposed to antiseptic irrigation, and prefers dry sponging of the intestines. He has abstained from searching for or resecting the appendix, so as not to prolong the operation, and increase the already marked debility of his patients. If it had been possible, however, to bring the appendix readily into view, he would have considered its removal an advantage to the patients.

In cases of sacculated abscess the necessity of incision is generally acknowledged, and this should be done as early as possible on account of the danger of rupture, and also to prevent the development of pyaemia which the author observed in a case treated by non-operative measures. The existence of pus in a perityphlitic exudate is indicated by the quite marked elevation of temperature. An exploratory puncture with a fine hypodermic needle is also a valuable aid to the diagnosis. This procedure is free from risk, if the puncture is made through adherent coils of intestine, although it may be dangerous if a distended tympanitic intestine is perforated. It should be remembered that the abscess does not always

occur in the typical region. The author has operated upon five cases of intra-peritoneal exudates; four of the patients made a rapid recovery, and the fifth case, (that of a woman), in which the possibility of a tuberculous process being present could not be positively excluded, is still under treatment for a faecal fistula. The performance of the operation in two sittings, as recommended by Sonnenburg, is not favored by Koerte.

Paratyphilitic abscesses have less of a tendency to burst into the peritoneal cavity, but give rise to other serious conditions, such as the development of progressive phlegmonous processes. The pus may find its way into the subphrenic space and thence may penetrate into the pleural cavity. The author has operated upon five such cases, besides three cases of simple paratyphilitic abscesses, all of which recovered. He regards early recognition of these abscesses of extreme importance, and this is greatly facilitated by the use of the aspirating needle. He has always found the situation of the cæcum and appendix entirely intra-peritoneal,

In chronic recurrent inflammation of the veriform appendix, the symptoms are probably frequently due to conditions of retention, these cases being analagons in many respects to purulent catarrh of the Fallopian tubes (pyo-salpinx). Like in the latter, surgical intervention seems called for in appropriate cases. Koerte has operated on two occasions. In one case the appendix, which was of the size of the little finger, had twined around the colon and become firmly adherent; it was filled with purulent fluid. The appendix was carefully separated from the colon, ligated and resected, and the stump was implanted in the colon. Recovery took place promptly. Examination of the resected piece showed two perforations which communicated with the adhesions and exuded pus. The veriform process was obstructed above its termination in the intestine. A condition like this can prove very dangerous to the patient, for any blow or slight traumatism may cause rupture of the adhesions, and entrance of pus into the peritoneal cavity. In the other case the appendix was found in the sac of a strangulated hernia during operation and resected. Recovery was complete eight days later. The appendix was obstructed in a similar manner as in the above case and contained fetid pus. In such cases operative procedures appear fully indicated. To go further and perform the operation as a prophylactic measure, within the first twenty-four hours of an attack of perityphlitis, as has been done in America, is regarded by the author as entirely uncalled for, since the vast majority of cases recover under internal treatment.

THE "COOL SOUND" AND ITS APPLICATION IN URETHRAL DISEASES.

BY DR. J. H. BRIK, Vienna.

THE "cool sound," or psychrophor, is a double current metal catheter without fenestra. The tubes for the inflow and outflow, are provided with rubber tubing, the former being connected with a vessel containing cold water and placed at a higher level, and the latter terminating in a vessel placed on the ground. The catheter is introduced as far the prostatic urethra, the patient lying on his back, and then the stop-cock of the afferent tube is opened and the current of cold water allowed to circulate through the instrument. This method was first introduced by Prof. Winternitz.

The effect of this procedure upon the healthy urethra, consists in an increase of tone, the production of local anaesthesia, together with a diminution of the secretions. The sensation of cold experienced by the patient is usually described as very agreeable. Objectively there is observed an energetic contraction of the cremaster muscle, so that the catheter is held firmly when the attempt is made to withdraw it.

If hot water is employed the same tonic effect is produced, but the secretions are influenced in a less degree.

The calibre of the instrument varies between Nos. 20 to 30, according to the size of the meatus. Irrigation of the urethra with an antiseptic solution is unnecessary, since recent experiments have demonstrated the impossibility of rendering the canal aseptic. The catheter must, of course, be disinfected, and is then anointed with a 10 per cent. ointment of salol and lanoline.

The urethral diseases in which the "cool sound" may be employed with advantage are as follows:

1. *Inflammatory Conditions.* This method is only useful in chronic inflammations of the urethra. In the later stages of gonorrhœa, the inflammatory process extends to the submucous layer, and gives rise to firm infiltrations and to thickening and narrowing of the urethral canal. In this condition little can be accomplished by internal remedies, or by local application of astringents and antiseptics. It is here that the "cool sound" proves efficient, both on account of the mechanical dilatation produced by it, and the sedative and antipyretic effect of the cold. The procedure, which is employed once daily, is carried out in the following manner: A catheter of moderate calibre (Nos. 20 to 22 Fr.) is slowly introduced into the urethra, and allowed to remain from

five to ten minutes, while water having a temperature of 50° to 53° F. is passed through it. Gradually instruments of larger calibre are employed and the duration of the sittings prolonged. As soon as the sensitiveness of the urethra has been reduced, water of a higher temperature (86° to 93° F.) is used for fifteen to twenty minutes. If the meatus is too narrow to permit the insertion of a large sized instrument, it must be incised. The result of this combined thermo-mechanical effect is rarefaction of the tissues, owing to the pressure of the sound and the softening and absorption of the new formation in consequence of the thermic irritation. The duration of treatment varies from three to four weeks.

Urethral strictures which are also caused by submucous inflammations are treated in the same manner.

2. *Urethral Neuroses.* According to Ulzmann sexual excesses and chronic gonorrhoea produce changes in the prostatic portion of the urethra which give rise to all sorts of reflex nervous disturbances. These conditions are associated with a hyperaemia of the prostatic portion, and followed by a hyperaesthesia, which in turn produces pollutions and neuroses of motility, sensibility and secretion.

The motility-neuroses appear in the form of a spasm or paralysis of the muscular structures of the anterior and posterior urethra. The spasm of the urethral muscles is shown by the fact that some time after the act of urination has been completed, a few drops of urine dribble from the urethra, which is due to the relaxation of the spasm.

Spasm of the prostatic and membranous urethra is due to the presence of erosions at the vesical neck, etc., and gives rise to considerable disturbance.

In the treatment of these two conditions the aim is to remove the hyperaemia and hyperaesthesia, and this is accomplished most efficiently with the "cool sound." A moderately sized, well-rounded instrument is carefully introduced and cold water allowed to flow through it for some time. In females, in whom these disorders are of frequent occurrence, a catheter having a somewhat different curve is of great utility.

Paretic conditions of the vesical sphincter are characterized by incontinence of urine, and here the psychrophor is of great value.

In cases of pollutions and spermatorrhoea the main element is a relaxation of the tissues, which manifests itself partly by an increased reflex irritability of the muscular layer of the seminal vesicles, ejaculatory ducts and urethra, and partly by an atony or paresis of these parts. As regards prognosis, two forms or stages must be distinguished; first, one in which there is marked hyperaesthesia and second, one in which the urethra is not sensitive to instruments. It

is in the first form that the psychrophor is chiefly indicated. The sittings should last from ten to fifteen minutes, and water of a temperature of 57° to 60° should be used. The procedure is resorted to daily for three weeks, and the calibre of the instrument is gradually increased, while the temperature of the water is reduced to 50 or 46° F. In the second form, which is much more obstinate to treatment, warm water is preferable, beginning with a temperature of 86°, and limiting the duration of the procedure to five minutes.

In spermatorrhoea the therapeutic indications are to improve the tonus of the smooth muscular layer of the ejaculatory ducts, and this may be accomplished both by the cool or warm sound. The former is first to be tried, and if the effect is not satisfactory, the latter is resorted to.

The sensibility neuroses are frequently associated with those of motility and secretion. The symptoms comprise hyperaesthesia and neuralgia (abnormal and painful sensations in the fossa navicularis and middle of the pendulous portion). The pains sometimes appear in paroxysms. These conditions, together with neuralgia of the testicle, are frequently cured by this treatment. In sexual neurasthenia attended with impotence, the stimulation of the prostate by the application of cold, and preferably warm water, produces vigorous erections. In cases where there is precipitate ejaculation in coition, due to hyperaesthesia, the "cool sound" acts most efficiently; while in cases where ejaculation is retarded in consequence of a relaxed condition of the seminal vesicles and urethral muscles, warm applications are more suitable.

In neuroses of secretion, such as prostatorrhoea, which are due to chronic inflammations of the urethra, the same method of treatment is indicated.
—*Blatter f. Klin. Hydrotherap.*

THE NEW TREATMENT OF CANCER.

At a meeting of the Royal Society of Physicians of Vienna, November 13, 1891, Prof. Adamkiewicz, presented a case of extensive epithelioma of the face, which he had treated with a remedy, discovered by himself, and named "cancroin." He does not claim to have found a specific for cancer, but asserts that he has laid the foundation for a rational therapeutics of this disease, by demonstrating the poisonous nature of cancerous tissues. He has succeeded in evoking reactions in cancerous tumors, which, though slight, have produced positive curative effects. The case reported was that of a man, aged thirty-four years, who had suffered for many years from an epithelioma of the nose, which had gradually extended to the eyelids and forehead, despite the employment of all

kinds of treatment. So extensive had become the disease, that excision of part of the lids and removal of the eye had been recommended by a surgeon. The patient then consulted Dr. Adamkiewicz, who began treating him with injections of cancroin on August 25, 1891, the drug being injected into the front and back of the neck, and employed once daily. The first changes noticed occurred in two enlarged glands which were present, the one below the jaw, and the other in front of the ear; the former had disappeared two days after the commencement of the treatment, the latter diminished much more slowly in size. At first the surface of the ulcer, which presented the typical appearance of a destructive epithelioma, was apparently unchanged, but on the fourth day of treatment a marked redness and elevation of the margins was observed. On the fifth day the sore began to discharge profusely a greenish-yellow secretion; the redness subsided, and the border line between the healthy and diseased skin became to a great extent obliterated, a fine blueish seam alone intervening. On the tenth day of injection, cicatrization commenced at the margins, first on the nasal side, and later, at the inferior margin. The scar extended with great rapidity, the margins of the ulcer contracted, and the infiltration disappeared. On October 12, about four weeks after the initiation of treatment, cicatrization was nearly complete, and November 13, nothing was left of the extensive sore, except a small opening which discharged pus.

Dr. Adamkiewicz thinks that even if the result should not be permanent, the rapidity with which healing was effected is certainly remarkable. Although it is well known that epithelioma may sometimes be cured by the application of caustics or irritants, this in his opinion, could not have happened in his case, inasmuch as the remedy was injected into the neck, and must have acted upon the cancer through the circulation.—*Wien. Med. Presse*.

ENTERO-ANASTOMOSIS BY LATERAL APPPOSITION.

BY DR. VON HACKER, VIENNA.

At a meeting of the Royal Society of Physicians of Vienna, the author exhibited a case in which four and a half years ago, he had performed an entero-anastomosis by lateral apposition—the first operation of the kind successfully performed. The patient, a girl aged fifteen, was admitted to Billroth's clinic with an intestinal stenosis. At the operation the caecum and posterior portion of the ascending colon were found to have been converted into a tumor, twenty centimetres in length, which was so intimately connected with the subjacent parts that resection was excluded. A

longitudinal incision was therefore made in the ileum and colon, and the two openings were approximated by sutures. A second, circular stenosis was found in the small intestine, which was removed by incising the gut in a longitudinal direction, and suturing it transversely. The patient made a rapid recovery. Von Hacker has operated in a similar manner on a case of recurrent carcinoma of the caecum, the patient surviving seven months after the operation. This procedure has been resorted to sixteen times by other surgeons, and usually with success.

He thought that the method originated by Hochegger, which consists in completely eliminating the diseased gut by dividing it and sewing its ends into the external wound is not necessary in all cases. It is especially suitable in chronic inflammatory processes, where subsequently the entire diseased portion can be removed by a slight operative procedure. If rapid surgical interference is demanded this method may also prove preferable to lateral anastomosis.—*Wien. Medic. Presse*, No. 50, 1891.

WOUNDS OF THE FEMORAL VEIN.

In an instructive article in the University Medical Magazine, December, 1891, Dr. Martin, of Philadelphia presents the following conclusions:

- (1) The femoral vein is not the only channel by which the blood of the leg may reach the pelvis.
- (2) For the establishment of collateral circulation venous pressure, equal to that which is found in the arteries, is often requisite.
- (3) Wounds of the femoral vein inflicted by the surgeon in extirpation of tumors will not be followed by gangrene if the vein only is ligated. All wounds, however, become more serious in proportion to their proximity to Poupart's ligament.
- (4) Wounds of the femoral vein inflicted in tumor operations are liable to be followed by gangrene if vein and artery are both ligated.
- (5) Wounds of the femoral vein inflicted by weapons or sudden violence, and where the surrounding parts are previously healthy, are frequently followed by gangrene, even though the vein alone be ligated. This complication is rendered more probable by ligating both vein and artery.
- (6) The treatment of hemorrhage from the femoral vein by ligature of the femoral artery should not be practised.
- (7) Lateral closure of vein-wounds where possible is to be preferred to all other means of treatment. If the lateral ligature is employed it must be of fine silk, and the thigh must be flexed until it is vertical to the plane of the body.

Suture is to be preferred in this region ; and in case both these methods are unsuccessful, forceps should be tried before the surgeon resorts to circular ligation. The forceps should be removed in forty-eight hours, the wound being carefully packed in the meantime.

Where the suture is employed, it should be of cat-gut and continuous, and should bring intima to intima. Over the first line of suture the sheath of the vessel should be sewed to give additional support.

(8) The treatment of injuries to the femoral vein by closure of the external wound and the application of pressure is not to be recommended, since the blood-pressure in this vessel is higher than in other veins (Ollier records one success from this method).

To this statement an exception can be made. When the femoral vein is wounded with a ball of small calibre, the hemorrhage is not necessarily marked or continuous. Antiseptic dressing and firm compression may in this case either allow the vein-wounds to heal entirely or may, if the artery is also wounded, favor the occurrence of an artero-venous aneurism—operation upon which will subsequently be far safer than ligature of the femoral artery and veins at the time of injury.

(9) Where the vein is ligated the foot and leg should be held in vertical suspension, since this greatly aids in overcoming the resistance of the valves, which normally prevent collateral circulation.

(10) The maintenance of asepticism and the support of the entire limb by careful bandaging are both requisite for the treatment of femoral vein injuries.

**CASE OF ABSCESS OF LUNG; OPERATION:
RECOVERY: REMARKS.**

BY FRANCIS HUBER, M.D., of New York.

As a text for the remarks to follow, the history of the case is given in brief :

Benj. J., four years old, had been ill about four weeks when first seen in October, 1888. He was troubled with exacerbation of fever, irregular chills, and a distressing cough ; had lost flesh and strength, growing pale and waxy in looks. The physical examination was negative, with the exception of an area of flatness, with distinct bronchial breathing in the right infra-clavicular and mammary region. Exploratory puncture brought pus, and the diagnosis of localized empyema was made. At the operation (incision with drainage) pleural adhesions were found and the pus was discovered to be in the substance of the lung. The cavity gradually contracted and a small fistula remained, which closed about ten months from the onset of the disease.

The exploring syringe readily detected pus on the day prior to the operation. Rather unwisely, the needle was removed and the incision made. When the pleura was opened, the needle again was inserted, and it was only after repeated punctures that the site of the suppurating process was rediscovered. A severe pneumonia of the upper lobe (laterally and posteriorly) resulted, no doubt caused by the multiple punctures. In another case I shall certainly leave the needle in as a guide. Gentle irrigation of the cavity or of the fistula later on was not followed by any bad effect ; if forcible injections were resorted to, a severe paroxysmal cough would follow, to terminate when the injected fluid had been expectorated, the fluid having entered a bronchial tube.

Although abscesses of the lung secondary to tuberculosis, pyemia, metastatic processes, or traumatic in character, are by no means infrequent, the simple non-tuberculous and non-metastatic varieties are but rarely met with. They present themselves in one of four forms. In the first variety the symptoms are obscure and the diagnosis is only made when the abscess ruptures into bronchus, or the pus is discharged externally through the integument. In the second class the symptoms resemble those of pleurisy with effusion ; in the third class, those of tuberculosis ; the fourth variety is generally associated with broncho-pneumonia. The affection is at times met with in children in a debilitated condition, living under poor hygienic surroundings. Meigs and Pepper believe the trouble to be of frequent occurrence, a sequel to the third stage of pneumonia, while Gerhardt Henoch, Eustace Smith, and others, teach the contrary. The early recognition of the disease is difficult, for the disorder is usually secondary to pneumonia ; the occurrence of chills, sweating, and increased vital depression ought to put one on his guard. A sudden expectoration of pus, with the rapid formation of a cavity in a portion of the lung previously consolidated, is characteristic of the rupture of a pulmonary abscess.

Abscesses may be solitary, of greater or less size ; may be multiple and disseminated, superficial or deeply seated. The smaller may coalesce to form larger abscesses. The process may run an acute course or become chronic ; it may occur coincidently with the original disease or manifest itself later, the pulmonary tissue remaining consolidated, resolution not having taken place. The walls may be sharply defined or the suppurating process may gradually be lost in the normal lung-structure. Perforation may occur into a bronchus or externally through the integument : the pleura or some adjoining organ may be invaded. Or the abscess may become encysted, undergo calcification, caseous degeneration, or become

infiltrated with tubercles. In some cases the entire lung has been destroyed and converted into a large abscess-cavity.

The physical signs are not characteristic; before rupture occurs the parts are consolidated. A sudden more or less copious expectoration of pus in the progress of a pneumonia is due to the bursting of a pulmonary abscess. We now get the physical signs of a cavity in a portion of the lung previously infiltrated.

As to differential diagnosis: In gangrene the odor of the breath is fetid, the expectoration being green, fetid, and penetrating. Localized empyema may be excluded by the absence of a history of former pleurisies. In empyema discharging through the lung, the quantity of pus expectorated is large and the physical signs reveal fluid in the pleural sac. When hepatic abscesses discharge through the bronchi, the expectoration is copious, dirty-brown, and paroxysmal. In doubtful cases of tuberculous character, the presence of tubercle bacilli will establish the diagnosis.

Treatment is symptomatic, and consists in the use of stimulants, tonics, and antiseptic inhalations. The exhaustion may be counteracted, and infection prevented by proper incision and drainage.

In conclusion, the rules enunciated by Dr. Spillman and Haushalter are presented for our guidance:

1. Before operation, the position of the abscess must be determined as accurately as possible, and especially by exploratory puncture.

2. As a rule, a pulmonary abscess should not be opened during the course of an acute pneumonia.

3. Before the abscess is opened, it is well to excise pleuritic adhesions, if these do not already exist. This should be done by resection of a rib and suture of the two pleural surfaces, or by means of the actual cautery.

4. The abscess is best reached by resecting a rib and piercing the lung with a thermo-cautery.

5. Free drainage is essential; antiseptic injections are best avoided, dry dressings being preferable.—*Medic. News.*

THE CLOSURE OF LARGE DEFECTS IN BONES.

BY DR. LE DENTU.

In a paper read before the Societé Savantes, the author stated that bone grafting by means of pieces of living bone has not proved of much value. The ingrafted fragments are gradually absorbed, or are cast off as foreign bodies, and even when they appear to have preserved their vitality, they only bring about repair very slowly. If the bone is derived from an animal, its disintegration takes place even more rap-

idly than when taken from the patient himself or some other person; in the latter case we also run the risk of transplanting syphilitic or tuberculous osseous tissues on healthy bone. It is not therefore surprising that the grafting of healthy bone has been discarded in favor of aseptic decalcified bone.

To Dr. Senn, belongs the credit of introducing this method. In 1889 he reported a number of cases in which he had filled up osseous defects with small chips of decalcified bone—a procedure which has given him fair results. In March 1891, Kuemmel, of Hamburg, published the results of his experiments in replacing the small long bones, like the metatarsal and metacarpal bones, by decalcified bones of the same length. M. Le Dentu was led to believe that the transplantation of larger fragments might give similarly good results. A resection of the tibia and fibula in the lower part of the leg furnished him the first opportunity of testing this idea.

The patient was a young man, sixteen years old, who had suffered for twelve years from tuberculous osteitis. Several fistula had formed which exuded a sero-purulent fluid; the malleoli were greatly enlarged, and the tibio-tarsal articulation had become ankylosed. This condition, together with a talus valgus, rendered walking a matter of great difficulty. There was a marked shortening of the limb and atrophy of the muscles. The tibia and fibula were resected to the extent of seven centimetres, the fungosities destroyed, and the superior surface of the astragalus abraded. The excised bones were then replaced by a single piece of decalcified bone of the same length and taken from a calf. Over this graft the periosteum and integument were sutured with great care. A plaster-of-Paris bandage was then applied to immobilize the foot and leg. The first dressing was left on for two weeks. On the fifteenth day after operation a small opening was made to permit of the escape of a large quantity of serum. Six weeks after operation commencing solidification was noted, and at the end of three months the patient left the hospital, walking with the aid of a silicate dressing. The consolidation has since become complete and the articulations are perfectly movable.

M. Le Dentu has successfully employed this method in nine other cases. The bone is prepared as follows: The bones are taken from a calf, ox or sheep freshly killed, and deprived at once of their marrow and periosteum. The femur and tibia of the ox, which have a thick layer of compact tissue, are preferred. The bones are cut into fragments of various size, and placed in a solution of hydrochloric acid, 1 in 10, for eight days. They are then washed in pure water, left for twenty-four hours in a solution of corrosive sublimate, and preserved in a solution of iodoform in ether.—*La Tribune Médicale.*

Surgical Memoranda.

Treatment of Sprains.—Dr. N. W. Cady regards the following as an infallible remedy for sprains: A half hour's douching with water at a temperature of 120 degrees F., and the fixation of the joint by a splint on the flexor side of the joint, or upon the extensor side, if that be more convenient.—*Med. Record.*

Tendon Suture.—Dr. J. M. Marin reports a case of wound of wrist with lesion of the extensor communis tendons of the fourth and fifth fingers. The upper ends of the tendons were much retracted, and it was found necessary to open the sheaths 10 centimetres (4 inches) upward in order to practice tenorrhaphy with catgut. Another wound on the same hand had carried off part of the second metacarpus and opened the radio-carpal joint. All the wounds were sutured with catgut. On the second day the wounds over the tendons were healed. The other one had to be opened on account of an accumulation of pus. The latter wound was redressed and immobilized, and healing proceeded without further accident.—*Boletin del hospital general de Puebla*, vol. i, 1891, p. 143.—*Satellite.*

The Treatment of Epithelioma with Injections.—Dr. C. J. Rossander (*Schwed. Centralbl. f. Chir.*, 1891, 46) recommends solutions of caustic potash as a remedy in cancer which has the power of destroying the epithelial cells of the neoplasm. He has treated four cases of epithelioma of the face with injections of caustic potash of the strength of one-half to one per cent. The injections should be made as close as possible to the growth, and repeated every two or three days; the quantity used each time varies from 2 to 3 grammes distributed over several places around the epithelioma. Although the course of treatment was protracted the results were strikingly good in three of the four cases.—*Medicin.-Chirurg, Rundschau*, Dec. 15, 1891.

Injections of Carbolic Acid into Carbuncles.—Dr. H. Graff (*Norsk Magaz. f. Laegevidensk*) regards injections of pure liquified carbolic acid as the most efficient means of treating large furuncles and carbuncles. By this method it is frequently possible to abort the disease, or at the least to relieve the pain. Before making the injections the surface of the swelling and surrounding parts must be protected from the caustic action of acid by vaseline or a simple ointment. The syringe should be provided with a fine sharply pointed needle; this is inserted with a rapid

thrust into the side and through the base of the furuncle and the fluid injected slowly, or the needle is carefully introduced into the opening of the furuncle and the injection made in all directions. Cases of furuncle of the neck require from 2 or 3 drops to one-quarter of a syringeful, while carbuncles as large as the hand may require one and one-half to two and a half syringefuls of the acid. The destructive effect of the remedy never extends beyond the diseased parts; and symptoms of poisoning are never observed.—*Medicin. Chirurg. Rundschau*, Dec. 1, 1891.

Wounds of the Ureters in Laparotomies.—Dr. Pozzi (*Ann. des mal. des org. genito-urin.*, No, 8, 1891) states that the ureter is sometimes wounded during the removal of retro-peritoneal tumors by laparotomy. This accident has been observed especially during extirpation of cysts of the broad ligaments and parovarian cysts. The injury may consist of a simple lateral tear or a complete laceration of the walls, with or without separation of one end. It is usually the lower end which is injured. If there is a simple lateral or even a complete laceration of the ureteral walls without any other injury, it is necessary to restore the lumen of the canal by accurate suture, this proceeding being sometimes facilitated by introduction of a sound into the ureter by way of the bladder. In cases, however, where a portion of the ureter is completely destroyed, the treatment consists in either the establishment of a lumbar urethral fistula followed later by a nephrectomy or the extirpation of the kidney immediately after the accident. The former method is in many cases the most certain.—*Centralbl. f. Chirurg.*, No. 51, 1891.

Spasmodic Wry-Neck.—Noble Smith has published a pamphlet on this subject, in which he arrives at the following conclusions:

1. Neither drugs, local applications, nor other general methods are of any permanent use in the treatment of well-established spasmodic wry-neck.
2. Electricity has failed to do any permanent good except in some recent cases, which probably differed entirely in their nature from those referred to.
3. Nerve stretching, although successful in a few cases, cannot be depended upon as a certain remedy.
4. Section and ablation of a piece of the spinal accessory nerve is absolutely certain to remove all spasm from the muscles supplied by that nerve, and is very likely to remove spasms set up in other muscles, although other nerves are apparently involved.
5. The most certain and satisfactory plan of operation is section of the nerve upon the inner side of the sterno-mastoid before it enters the muscle.

6. When other muscles remain spasmically affected, the spasms may be removed by section of the nerves supplying those muscles.

7. The operations of section of the spinal accessory nerve, and of the posterior roots of the cervical nerves are not followed by serious inconvenience to the patient from paralysis of the muscles.

8. There seems to be no risk of the reunion of the nerves and return of the spasms after operation.

9. It seems probable that other convulsive movements of the head may be remedied by section of nerves.—*Times and Register.*

Retrograde Dilatation of Oesophageal Strictures.—Dr. J. Giessler reports the method employed by Prof. Kraske, in a case of impermeable cicatricial stricture of the oesophagus, of uncertain origin. After the performance of gastrostomy several unsuccessful attempts were made to pass instruments from the stomach into the oesophagus, and Kraske therefore proceeded as follows: A silken thread was carried down to the stricture by way of the mouth, by making a thick knot at the lower end and pressing this into the opening of a thin oesophageal catheter. The thread was removed from the fenestrum by injecting water into the tube, which was then withdrawn. By means of active movements of swallowing, the patient succeeded in forcing the knot through the stricture into the stomach. As it was not possible to seize the knot with instruments, the stomach was irrigated through a glass tube and the thread floated out. Small olive-shaped plugs of ivory could now be introduced into the stricture by the use of the thread, and dilatation was thus rapidly effected. After closure of the gastric fistula the patient was discharged perfectly cured.—*Münch. Med. Wochenschr.*

Gunshot Wounds of the Spine.—At the Paris Society of Surgery, Nov. 18, 1891, an interesting discussion took place on the above subject. M. Nicaise said that these wounds are serious, but not always fatal. A certain number of patients require no operation; hence it is necessary to determine the rules for interference. The lesions of the spinal cord can be divided into 3 groups: 1. Simple pressure. 2. Lesion of the nervous tissue by the projectile. 3. The projectile is fixed and protrudes into the interior of the canal. Interference is legitimate in the first and third group of cases, even if trephining is necessary. Non-operative treatment gives a mortality of 70 per cent, while interference reduces it to 50 per cent. In the second group of cases, it is more difficult to decide what is the best plan, as sometimes the operation seems to aggravate the patient's condition. Ordinarily the aggravation is temporary, and is followed by

improvement. M. Lucas-Champonnierè said that in wounds due to fire arms, trephining is a simple operation, while in wounds due to other traumatic agents, the exact determination of the seat of the lesion is often very difficult.

Reduction of Dislocations by Manipulations.

—Dr. Westmoreland, of Atlanta, employs the following method: Flex the fore-arm on the arm; rotate outwards, pressing the elbow to the side; rotate to a right angle, when, with a click, the bone slips into position. Carry the arm across the chest and apply a bandage. The patient must be placed on his back on a hard surface. This is important. Sometimes the elbow has to be lifted. Occasionally the bone is caught between the muscles. The same measures, with slight circumduction, will suffice. Invariable success has attended this method, even three or four weeks after the dislocation occurred. Any forward dislocation can be reduced in the same way, provided the coraco-humeral ligament is not ruptured. This must be put upon a stretch before reduction can be accomplished.

Dr. Bedford Brown uses the following method, which applies to all varieties of dislocations of the shoulder. Place the subject on a wooden-bottom chair, with a man on each side to steady him. Place the knee under the shoulder. When sufficient extension upwards and outwards has been made, press the arm over the knee. He has reduced twenty-odd cases in this way.—*Virginia Med. Monthly.*

Rules in Abdominal Surgery.—Dr. J. E. Summers, of Omaha, presents the following rules for our guidance in abdominal surgery:

1. Never operate upon a practically moribund patient whose disease is chronic.
2. The same rule applies to all acute diseases or injury, except where hemorrhage is the depressing or suspected depressing cause.
3. Never hesitate to operate upon otherwise hopeless cases, if experience has proven success to have followed interference even if only a very small percentage.
4. Use all the principles of modern antiseptic surgery before opening the abdomen, those of aseptic surgery afterwards.
5. Use drainage only after irrigation, evacuate the tube frequently and remove it early.
6. No nourishment by the mouth for 24 hours, giving hot water in small quantities to allay the thirst.
7. Peritonitis should be treated by large doses of calomel and copious turpentine enemas. In intestinal lesions, splinting the bowel by opium may be the proper practice.—*Medic. Mirror*, Dec., 1891.

Antiseptic Memoranda.

Straw Ashes as a Surgical Dressing.—Surgeon Major Kikuchi recommends the straw ashes obtained by burning rice straw as a surgical dressing, on the grounds that they have strong absorbing properties, are soft and elastic, cheap and easily obtainable. The material which he used was an old straw bag, made into a coarse powder after burning by rubbing the ashes between the palms. From 50 to 100 grammes are put in a cushion of gauze, which is applied over a piece of iodoform gauze. This dressing is said to be especially advantageous in military service.—*Sei-i-Kwai Medical Journal*, Sept. 26, 1891.

Drainage in Abdominal Surgery.—Dr. D. P. Allen, of Cleveland, employs drainage in the following conditions: 1. In septic peritonitis. The drainage should be effected in any direction requisite for its perfection, whether ventral, vaginal, or lumbar. 2. In tubercular peritonitis, when the fluid produced by the tubercular process is contained in a cavity occupying the pelvis and the lower portion of the abdomen, and is shut off by adhesions from the upper portion of the abdomen. 3. In perityphlitis when pus is present, and where adhesive inflammation has prevented its invasion of the general peritoneal cavity. Where the infection is generalized, the indications are of course the same as in septic peritonitis. 4. In hemorrhage. When this occurs in considerable quantity and can not be controlled, it is best that the blood should be removed. It is, however, better to take care that much hemorrhage does not occur, than to seek to escape its dangers by drainage. 5. In extra-uterine pregnancy. In operations for this condition there are cases in which it is impossible to control bleeding, and in which drainage is important. 6. In the escape of cyst contents into the abdominal cavity. When this occurs and the material is infectious, no precaution for its removal can be too great, and in addition to washing, drainage is doubtless in place. The contents of simple ovarian cysts seem to be innocuous. 7. In pyosalpinx. If pus tubes can be removed without rupture, and the uterine extremity of the tube be disinfected, seared with the actual cautery, drainage is unnecessary. 8. In pelvic abscess.—*N. Y. Med. Jour.*

Asepsis in Intra-peritoneal Surgery.—Dr. W. H. Wathen, of Louisville, states that chemical solutions for the purpose of sterilizing the operator, assistants, nurses, or patients, or the room, instruments, sutures, dressings or sponges, should be used before the operation is begun, but the chemical ger-

micide should be removed from everything that is brought in contact with the peritoneum. The peritoneum is usually infected by contact, and the danger of atmospheric infection is practically nil, as has been shown by the excellent results in laparotomies done in large and crowded amphitheaters. He advocates supra-pubic drainage with a small glass tube with open ends and fine holes on the side extending within from two or three inches of the mouth. This he claims is sometimes necessary to get efficient drainage in view of the fact, that blood or secretions from tissues above the pelvis do not always by gravitation go into the retro-uterine pouch.—*Times and Register*.

Treatment of Wounds by Sublimate Baths.—At a meeting of the Medical Society of London, October 19, 1891, Mr. Mansell Moullin described a method of dealing with lacerated wounds, especially those in which fracture was complicated by extensive lacerations. It consisted in placing the wounded part in an antiseptic bath at the temperature of the body. He had tried this procedure in thirty cases, with only two failures, and these two were, in all probability, directly due to the escape of sewer-gas in the immediate vicinity of the patients. He began with a 1 in 1000 sublimate solution, reducing the strength in a day or two to 1 in 10,000. As to duration, sometimes the bath was employed only for an hour; in others it had been kept up for a fortnight, night and day. In the two patients who had remained under the treatment for a fortnight, there were unmistakable symptoms of mercurial poisoning, but they ceased immediately on the bath being suspended. As a general rule, no symptoms pointing to mercurial absorption were present.—*British Medical Journal*.

"Gutta-Percha Paper" in Ulcers of the Legs.—Dr. Vasily H. Kurchinsky, of Nejin, speaks highly of the so-called "gutta-percha paper" as the best means of rapidly curing even the most intractable ulcers of the leg. The diseased surface should be first carefully washed with a 4 per cent. boracic acid solution, and then gently dried with a piece of absorbent cotton-wool, after which a sufficiently large sheet of the "gutta-percha paper" (previously washed in the solution and dried between towels) should be applied, covered with a thin layer of cotton-wool, and lightly fixed by means of a muslin roller. The dressing should be changed every day. Under such simple treatment the ulcers are said to heal soundly in about five days in more or less recent cases, while those of older standing and greater severity are cured in two or three weeks.—*Brit. Med. Journ.*

Book Notices.

THE INTERNATIONAL MEDICAL ANNUAL AND PRACTITIONER'S INDEX. New York: E. B. Treat, 1891. [Ninth Year.]

The list of contributors to this volume comprises some of the most distinguished medical men in this country and in Europe. The aim, as the publishers state, has been to supplement the literature of the year by practical articles dealing with subjects which have outgrown the limits assigned to them in the text books. As a work of reference for the busy practitioner, who wishes to obtain the latest information on any subject with the least expenditure of time, it will be found a valuable addition to the library.

HISTORY OF CIRCUMCISION FROM THE EARLIEST TIMES TO THE PRESENT. By P. C. Remondino, M. D., Member of the American Medical Association, of the American Public Health Association, etc. Philadelphia and London: F. A. Davis, 1891.

In this readable and instructive little book, which displays extensive historical research, the author makes a plea for the more general performance of circumcision, both on physical and moral grounds. The history of eunuchism and hermaphroditism is also considered, and the various surgical operations on the prepuce discussed. The work is well worthy of careful perusal.

SURGERY: A PRACTICAL TREATISE, WITH SPECIAL REFERENCE TO TREATMENT. By C. W. Mansell Moullin, M. A., M. D., Oxon., Fellow of the Royal College of Surgeons; Surgeon and Lecturer on Physiology, at the London Hospital. Assisted by various writers on special subjects. With five hundred illustrations. Philadelphia: P. Blakiston Son & Co., 1891.

This treatise of one thousand one hundred and fifty pages, contains a large amount of sound and practical information, which embraces every department of surgery. The subject matter is well up to date, and the treatment advocated is in keeping with modern antiseptic methods. Owing to its eminently practical character, this book should prove very acceptable to the general practitioner, as a work for reference, while the student will find it a safe and satisfactory guide in his studies. The illustrations are excellent, and two hundred and fifty of them have been made from drawings especially prepared for this work.

THE SURGICAL TREATMENT OF WOUNDS AND OBSTRUCTION OF THE INTESTINES. By Edward Martin, M. D., Instructor in Operative Surgery, University of Pennsylvania, and H. A. Hare, M.D., Professor of Therapeutics, Jefferson Medical College. Philadelphia: W. B. Saunders, 1891.

This essay which was awarded the Fisk Fund Prize of the Rhode Island Medical Society in 1890, embodies the results of much careful original research in the laboratory, and of a thorough investigation of the literature of the subject. The topics discussed are Congenital Malformations, Intussusception, Internal Strangulation, Volvulus, Obstruction from Foreign Bodies, Intestinal Paralysis, Chronic Obstruction, Peritonitis, the Diagnosis of Various Forms of Intestinal Obstruction, the General, Special, and Surgical Treatment of Intestinal Obstruction, Wounds and Rupture of the Intestines. A valuable feature of this work, are the carefully prepared tables of cases of coeliotomy for gunshot wounds of the abdomen. To the surgeon, as well as the general practitioner, this brochure will prove of great value as an exposition of the present status of abdominal surgery.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. A yearly report of the progress of the general sanitary sciences throughout the world. Edited by Charles E. Sajou, M.D., and Seventy Associate Editors, assisted by over Two Hundred Corresponding Editors, Collaborators and Correspondents. Philadelphia: F. A. Davis, 1891.

This series of five volumes fully maintains the high position of its predecessors. To the general practitioner and specialist alike, this work furnishes a complete record of the year's doings in all departments of medical science. Those who have spent many weary hours in hunting up the literature of subjects in which they are interested at our medical libraries, will appreciate the boon conferred by a work, which presents, in succinct yet clear manner, the essence of thousands of articles that have appeared during the year in periodicals published in all parts of the world. The general practitioner will find these volumes a vast storehouse of facts arranged so as to be readily accessible, and enabling him to become acquainted with the views of authors writing in languages with which he may not be conversant. The Editor, Dr. Sajou, is to be congratulated on having secured the co-operation of so many distinguished collaborators. The arrangement and typographical appearance of these volumes is all that can be desired, and the numerous chromo-lithographs and maps are well executed and add to the value of the subject matter.

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Editorial Department.

NEW YORK, FEBRUARY, 1892.

ENDOSCOPY IN URETHRAL DISEASES.

Is endoscopy of any use in the treatment of urethral diseases? Is the endoscope an instrument of precision enabling one to recognize and treat, according to rational methods, deviations from the normal; or is it a scientific toy, a hobby of a few genito-urinary specialists, and a good means of impressing the patient with the idea that something is being done for him?

If verdicts go by majorities, this one will not be doubtful. Out of a hundred physicians, ninety have perhaps never looked through an endoscope in their lives; eight have used it to some extent in the past, but have now given it up; one uses it occasionally, in obstinate cases; and the hundredth surgeon employs it in each and every case. For the oscillations of the pendulum are equal on each side of the vertical line, and there are those who use the endoscope and local applications in every case; as well as those who treat and "cure" acute gonorrhœa with the strongest solutions of nitrate of silver.

Safety lies in the midst; and so we think does truth. Many cases of infective urethritis can be cured, and are cured, without any instrumental interference whatsoever. Others require the removal of old or recent cicatrical deposits—distention, divulsion, and division; or the snaring of polypi and the

slitting up of involved urethral follicles for their healing. Still others need ocular inspection and topical medication; without which the roughened and thickened patches of mucous membrane cannot be treated, and our most strenuous efforts are strokes dealt at random, and in the dark.

That the last class of cases is no small one is evidenced by the large number of cases of chronic gonorrhœa, uncured and deemed incurable both by the patients themselves and their physicians, that abound among us. They seem to get along fairly well. Recrudescences, due to venery and drink, are supposed to be new attacks, and are cured in a few days by some drummer's infallible prescription. Perhaps the dark picture drawn by Næggerath and his disciples of latent gonorrhœa and its effects is not quite a fair one, since it leaves out of consideration the large number of cases in which the presence of a urethritis not at all latent does not interfere with marriage, nor cause a salpingitis.

Yet there are dangers real enough in an uncured gonorrhœa, and the existence of these cases is a reproach and a disgrace to our skill. We do not believe that a single case is incurable. The way to health may be long and devious—filled with pitfalls and false roads; but it can be found, and should be followed with greater diligence than is often done. We are too apt to regard these cases either as unimportant and to be neglected, or as troublesome and to be gotten rid of.

In what cases, then, is endoscopy useful, and in what cases, if any, is it indispensable? In what stage is it to be employed, and what is the method of its technique?

Briefly it may be stated that endoscopy and topical applications to the urethral mucous membrane are to be employed as a last means, a powerful reserve, when other and commoner methods fail. The routine treatment of injections, ordinary or retrojectant, sounds, divulsers, urethrotomes, deep injections, antrophores, soluble bougies—even balsams and sandalwood, are to be employed in their logical order; the simpler and commoner causes of persistence of the discharge being attacked first, and then those of less frequent occurrence. A certain number of cases will be left in which the discharge still persists. Gonococci are found in it. These are the cases for a steady and persistent use of endoscopic treatment.

In almost every case a careful inspection of the urethral canal, reveals some change. Patches here and there, or perhaps a single spot of congested mucous membrane will be seen. The light pink hue proper to the normal mucous membrane will be absent, to be replaced by a dark angry crimson color. The smooth glistening appearance of the normal epithelium is gone; it is replaced by a roughness, which in some cases may be so great as to form a velvet-like pile. There may even be distinct villi.

We believe that there is no case in which some alteration will not be found. Granted that all complications of the nature of stricture or folliculitis have been looked for and removed, or found to be absent; a physical lesion lies at the base of every case of persistent urethral discharges.

Not everyone, however, can look through an endoscope and recognize what he sees. Practice and long-continued and careful study are necessary before disease changes can be differentiated from normal or accidental appearances. No one can be expected to see much the first time he looks through a microscope or an ophthalmoscope. The endoscope is a simple tube, with no optical or mechanical mechanism; but its length and narrowness, the reflection of light from its polished interior, and the nature of the illuminating agent employed, alter appearances greatly, and render experience as necessary as it is in the case of the other two instruments.

Granted that sufficient skill in diagnosis has been acquired, the endoscope is slowly withdrawn, and stopped at each point where a change is recognized. Every altered spot is touched with a long and slender cotton wrapped probe dipped in the medical application. Thus at one and the same operation there is made not only a thorough inspection of the canal, but also the local treatment.

As regards the remedies to be employed nitrate of silver fills all the indications, and is almost a specific.

We must beware of expecting too immediate a result from this as from any other method of treatment. Persistent effort, often extending over months, is necessary in old cases.

But success does finally crown our efforts in every case. The spots becomes less and less villous, less and less congested. The discharge, save for a slight increase on the day of application, diminishes and disappears; the gonococci are no longer found.

And so the gleet, which perhaps has lasted for years, is finally cured, and a case that has been perhaps given up as hopeless is restored to health. Intelligent and persistent effort in the right direction will meet with its reward.

ALBUMINURIA AND SURGICAL OPERATIONS.

In an interesting article read by Dr. J. W. Long, before the Southern Surgical and Gynaecological Association, the author arrives at the following conclusions: 1. That it is very rare for either ether or chloroform to injure healthy kidneys. 2. That when renal disturbances from the use of an anaesthetic, the kidneys being healthy, occur, they are due rather to prolonged narcosis, exposure of the patient, or perhaps to the combined influences of the operation and the anaesthetic. 3. That a mild degree of albuminuria or nephritis, especially if recent, is not a contra-indication to the use of chloroform or ether. 4. That even in the presence of advanced and extensive renal changes an anaesthetic might be employed, provided the patient or family are advised of the additional risk. 5. That, while it is by no means the rule, profound functional disturbances, and even organic lesions, may be induced by an operation, apart from the influence of the anaesthetic. 6. That such renal changes are due to reflex sympathetic action or sepsis, or both. 7. That operations on certain parts, notably the abdominal and genito urinary organs, and about the mouth and rectum, are especially likely to produce renal complications. 8. That albuminuria is always indicative of renal lesions, and should be regarded with distrust, but is not a positive contra-indication to an operation. 9. That when albuminuria is associated with other evidences of advanced renal changes no operation should be undertaken without first candidly stating to the patient or friends the dangers incident to the condition of the kidneys.

The presence of albumen in the urine after operations has too frequently and too unanimously been attributed to the anaesthetic employed. It were idle to deny that ether and chloroform are at times at fault in the matter, but we must recognize other causes for this occurrence. Dr. Robert F. Weir, of New York, has attributed the presence of albumen to a septic infection occurring during or after the operative procedure. The occurrence of albuminuria takes place, we are certain, in many cases as a result of extension of nephritic irritation which exists before the operation without manifesting itself by the appearance of albumen in the urine. The exposure of patients to cold, which was more frequent in the days of the universal use of sprays, has also been a cause of congestive renal changes followed by temporary or permanent albuminuric manifestations. Finally some patients show paroxysmal attacks of albuminuria whose pathological significance is still uncertain, but which are known to follow moral and physical shocks and to rapidly disappear.

Original Articles.

FOUR CASES OF TUMORS OF THE LARYNX SUCCESSFULLY TREATED BY OPERATION.*

BY H. HOLBROOK CURTIS, M.D., New York.

THE four cases which I present to-night represent a typical class of cases of papilloma of the vocal cords, which are interesting to the laryngologist in several particulars. It is generally supposed that a papilloma when removed is not apt to recur. The first case I show is interesting in that it illustrates a recurrence of the growth in exactly the same position nine years after the removal and apparent cure of the trouble.

In October last Mr. R— was brought to my office by Dr. Arango for operation upon a tumor situated on the left vocal cord at the junction of the anterior and middle third. The growth was attached by a broad pedicle and rested on the upper surface

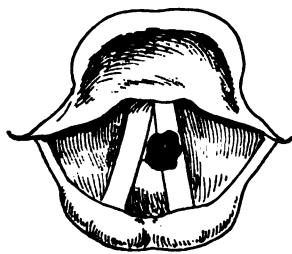


Fig. 1.

of the band. Though it could be pushed over the chink mechanically, it never disappeared during the act of inspiration. The patient brought a letter written to his father, who was a physician, by Dr. Clinton Wagner, who had sketched the growth and written a letter descriptive of it as far back as 1882—when Dr. Wagner had removed it. The growth then appears to have had its attachment below instead of on the upper border, but in the same relative position. I will read the letter which is as follows, and present the case for your observation.

November 19, 1882.

DEAR DOCTOR :

IN reply to your letter received some days ago, I would state that the growth I removed from your son's larynx was attached to the left vocal cord at about the junction of the middle with the anterior third. It seems to be attached rather to the inferior surface than the free edge, but during phonation it would come plainly into view.

On account of the excitable and nervous temperament of Mr. Rossi and the very sensitive condition of his larynx, I found it very difficult to introduce my forceps. After several attempts I succeeded in seizing the growth with the forceps and removing it entirely. I made use of Mackenzie's antero-posterior cutting forceps.

*Read before the Laryngological Section of the N. Y. Academy of Medicine, April 28, 1891.

The growth has the appearance of a fibroma. I shall be glad to place it at your disposal, should you care to exhibit it at the meeting of your county society.

I examined Mr. Rossi's larynx a few days ago. Approximation of the cords is perfect and no trace of the growth is visible.

Yours truly,

CLINTON WAGNER, M.D.

The patient is by profession a civil engineer and of an excessively nervous temperament. I was enabled however, after eight preliminary exercises, to remove it entirely by means of Mackenzie's antero-posterior cutting forceps, and exhibit it in a small vial (Fig. 1.) The voice which was very husky is at present restored and the nervousness is greatly benefited. Patients of this kind are apt to lose so much air in speaking that they become exhausted easily, and we generally find them in an extremely nervous condition.

Case II is that of a blacksmith, who first noticed his voice to have become affected some three months previous to his appearance. He came to my office in October last with a large pediculated papilloma attached to the under surface of the left cord, at the junction of the posterior and middle third. The tumor was sometimes sub-glottic and often supra-glottic during phonation, frequently engaging between the cords when speaking, causing great vocal disturbance. This case resembled the foregoing in many particulars, though the growth as, you see by the specimen, is much larger. I was enabled to remove it in six sittings (Fig. 2).

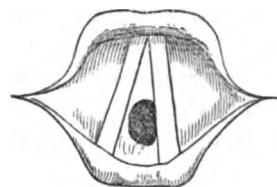


Fig. 2.

Case III is very interesting in that, besides the more frequently found pediculated growths, we find associated the flat polypoid variety which often extends into the ventricles, and closely enveloping the cords is apt also to be intimately attached to the inferior surfaces of the same. The removal of these by instrumentation alone is well nigh impossible, and the rapidity with which they recur, if the entire growth has not been removed, is remarkable. The patient in question came to me in June last with the following history : He had always been a singer, and during a trip to Texas three months previously had indulged in a prolonged session of tone production, more or less associated with indulgence in the well known wine of that country. He said he had sung in the night air until he had become hoarse, which was the initiation of the trouble in his larynx which

finally brought him under my observation. When first seen by me in June he had simply a light colored, polypoid, soft, matted growth on the right cord. While sojourning at the seashore during July and August and not submitting to treatment, a pediculated growth similar to those I have shown appeared on the lower border of the left cord, well rounded and differing in character from the other growth. After instruments had been introduced, during September, a similar soft growth appeared upon the left cord directly opposite the one upon the right, which is shown in the drawing (Fig. 3). The pendulous growth I had no difficulty in removing by a vigorous curetting, and succeeded in reducing the softer

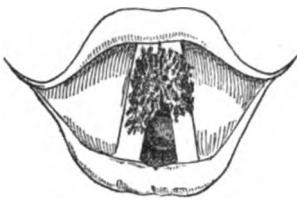


Fig. 3.

broad based growths in the same manner, together with use of the antero-posterior forceps. After every operative procedure an intense inflammation of the cords occurred, which necessitated an interim of two weeks in the treatment. Toward the middle of December, I suggested a six weeks cessation of attack to ascertain the true condition of affairs, before which interval I had removed nearly all the growths and applied chromic acid freely to the bases. On again seeing the patient on February 18th, I found the growths to have been reproduced upon both cords, but the pediculated growth not to have recurred. I succeeded in taking the new growths both off at the first sitting, much to my surprise, and you will be able to see the inflamed bases and the detritus which is the present difficulty to be overcome. I intend to try the tri-chloracetic acid, and would be glad to hear some remarks on selective caustics from anyone who may have had experience in these cases.*

Case IV will be interesting in that it illustrates a point I have frequently remarked in my practice, *viz.*, that singers are especially prone to be afflicted with papillomata. The patient enjoyed for many years the proud distinction of being one of the first tenors of the world. Some five years since, he was seized by a severe bronchitis and inflammation of the lungs. He experienced severe haemoptyses, and at the end of the acute trouble he was left with a chronic bronchial catarrh and a marked decrease of lung expansion. Since this time, until January of last year, he complained of a progressive lessening of vocal power and insufficient respiration. Upon

careful examination I perceived in the anterior commissure a small growth the size of a millet seed, which frequently engaged during phonation and made the voice of a strange, breathy tone. This little teat frequently became strangulated in the production of any note above E of the middle register, clouding the tone. During deep inspiration I next discovered that the smaller growth was but the cap of a subglottic neoplasm much larger in size, which was hidden in the anterior depression below the cords. The constant pressure of the smaller growth had left a V shaped indentation in the left cord. The sketch which I have drawn shows the relative position of the growths, which upon microscopic examination proved to be papillomata (Figs. 4 and 5).

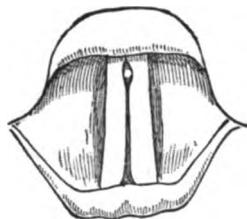


Fig. 4.

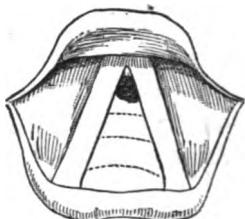


Fig. 5.

The patient when referred to me in January of last year by Prof. Ogden Doremus, was suffering from a chronic laryngitis, the result of the condition described above, and a post-nasal catarrh of unusual severity due to a septal enchondroma. His throat was exquisitely sensitive and he was peculiarly intolerant of cocaine. For five months, daily exercises were attempted in order that the forceps, which were especially constructed, might be introduced without disagreeable spasm and vomiting. This interval was taken advantage of for removing the nasal obstruction and relieving the catarrhal symptoms which were present. During the month of May I was enabled on two occasions to engage the sub-glottic growth in the double fenestrated forceps and remove the greater portion of it, but to my great disappointment the small growth still persisted and caused great annoyance. Applications of chromic acid were made below the anterior commissure at intervals of some six days by means of a lead catheter bent in such a manner that the eye in which was placed the acid should become prominent, as shown in Fig. 6; until the base of the growth was thought by me to have been sufficiently cauterized. The little growth which now was always thrown up between the cords in phonation seemed to baffle every effort at removal. However, on the thirteenth of July when I came in town by appointment to see the patient, to my great gratification, the entire surrounding growth was removed by a single introduction of the instrument. More or less bleeding

* Since exhibiting this case complete recovery has taken place.

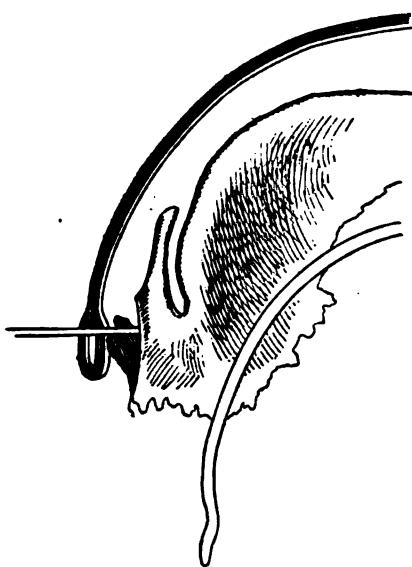


FIG. 6.

ensued, and I found that the sharp forceps had penetrated nearly half way through the body of the left cord. The patient spoke with difficulty and for some days I was filled with anxiety as to the result. I ordered him at once to Lake Hopatcong, with instructions not to speak a word for a month, at the end of which time it was apparent that the cord had entirely restored itself. As the band became congested in that locality whenever the patient attempted to use his voice, I did not permit him to appear in public, until the middle of December.* To-day there remains no evidence of the tumor, and unless a recurrence of the growth takes place, as the patient is but forty-four years old let us hope that the voice which will go down in musical history as among the most charming and artistic, will for many years to come illustrate the perfection of the pure Italian school.

HERNIA IN INFANCY AND ITS CORRECT TREATMENT.

BY ALEXANDER DALLAS, M. D., New York.

Consulting Surgeon to the Bayonne Hospital.

THE increasing interest shown in the treatment of hernia is an encouraging sign and warrants the inference that the days of apathy and neglect are passing away and that, ere long, this important subject will receive the care and attention it deserves. The indifference of the profession in the past has been most calamitous; its further continuance will prove suicidal, for the time is rapidly approaching when the medical attendant will be held to as strict ac-

countability in the treatment of hernia as he now is in a case of fracture or other serious injury. Here, as elsewhere, success can only be attained by intelligent, persistent effort, and every case of hernia demands and should receive the physician's best attention. Particularly is this the case in children, in whom hernia is quickly responsive to treatment, and the physician who, through neglect or ignorance, allows a child to grow up to manhood handicapped by so serious a disability, is guilty of criminal carelessness. Only those who are interested in this subject fully realize the immense amount of pain, discomfort and despondency, altogether unnecessary and avoidable, from which these patients suffer, and no amount of effort is too great to arouse the body of the profession to their clear duty in the matter. Our teachers, naturally, are looked to as the exponents of all advances in medicine and become, to a large extent, the moulders of professional opinion in the special branches to which they devote themselves, but, unfortunately, our teachers in hernia are either silent or give forth a very uncertain sound.

A few months ago an article appeared in one of our medical journals, written by W. B. De Garmo, M. D., Professor of Special Surgery (Hernia) in the N. Y. Post-Graduate Medical School, under the caption "Hernia in Infancy and its Treatment," in which the author distinctly states that "it is the intent and scope of this paper to give to the general practitioner a few hints that may aid him in the diagnosis and treatment of this class of cases." As "one of them," I venture to dissent from some of the hints contained therein, and while the article contains much that is good, it also contains statements that, in my judgment, are misleading. Using it as a text, I will endeavor to emphasize the good and eliminate what appears to me to be the evil.

About one half of all abdominal herniae occur during the first five years of life and, as they can almost all be cured under proper treatment, the importance of the subject can be readily appreciated. Generally these cases first come under the care of the family practitioner and he, to avoid trouble and evade responsibility, prescribes a truss and hands the case over to the nearest druggist or instrument maker, taking no further interest in it. The surgeon who would prescribe a splint for a fracture and expect the splint-maker to apply it would be justly condemned by the whole profession; and, yet, the one is just as rational as the other. No truss maker, however skillful a mechanic he may be, can be expected to give that intelligent service which the case demands, nor has any physician the right to evade his own responsibility in the matter.

*I have especially to thank Drs. O'Dwyer and Myles for valuable suggestions and assistance in the above case.

Hernia in infancy may be divided into congenital or acquired, the congenital being due to causes operative at birth, such as preternatural openings etc., although the hernial protrusion may not show itself for years. The acquired form is always due to forcible effort of some kind. The varieties of hernia met with are four, the inguinal, umbilical, ventral and diaphragmatic. Femoral hernia is never found at this period of life. Diaphragmatic hernia is very rare and is usually congenital, although one or two cases of the acquired form are recorded, due to traumatism. It is a protrusion of the abdominal viscera into the pleural cavity through an opening in the diaphragm. Ventral hernia is a protrusion of the viscera through some part of the abdominal walls, generally in the linea alba. It also is somewhat rare. To say that "congenital hernia refers to a protrusion of the viscera into the cavity of the tunica vaginalis," as our author states, is somewhat misleading and can only refer to one form of congenital hernia (inguinal). Inguinal hernia is the most common of all the varieties of infantile hernia. It is more frequent in boys than in girls. In 1,516 cases, there were 1,409 males to 107 females. It is also more frequent on the right side, due to the pressure of the liver and the slightly lower attachment of the mesentery on that side. It is a more serious affection in boys and, unless care is exercised, much trouble may result. In girls, it is not so serious and is more easily cured, unless complicated by prolapse of the ovary. When this occurs, the ovary should be returned at once; if irreducible it should be removed.

The formation of congenital inguinal hernia is usually rapid. After passing through the inguinal canal, it drops to the bottom of the scrotum, lying in front of, and obscuring the testicle, the separation between the two being often difficult to make out. The thickening of the cord, referred to by the author as a strong diagnostic point, I have not met except as due to pressure. The acquired form of inguinal hernia is generally slow in its formation. Beginning as a bulging over the upper part of the canal, it gradually descends along the cord into the scrotum, carrying before it a true hernial sac formed of peritoneum. Here the outlines between the testicle and tumor can readily be defined.

Umbilical hernia is the next most frequent form of infantile hernia, and is a protrusion of the viscera through the umbilical aperture. It may be congenital or acquired. The author states that "it is about equally divided between males and females," but, as a matter of fact, it is much more common in girls. This is attributed to the larger size of the umbilicus in the female sex, a condition recognized by the ancient sculptors, as seen in their statuary,

In infancy, the contents of the hernial sac are almost invariably intestinal, omentum being rarely found. This is said to be due to the proportionately longer mesentery, but, perhaps, more to the poorly developed condition of the omentum.

Among the predisposing causes of hernia, arrest or want of development is the most efficient. In the umbilical form, the non-closure of the opening for the transmission of the omphalo-mesenteric vessels is the most frequent cause. In the inguinal variety, among the more prominent may be mentioned the incomplete or delayed descent of the testicle, leaving a patent tunica vaginalis, and the incomplete formation of the internal oblique, transversalis and cremaster muscles. Inherited predisposition is claimed to be a very common cause, especially under twelve months of age. Age, also, is said to exercise a very material influence. In the first year after birth, hernia occurs in the proportion of 1 in 21, in the second year, 1 in 29, in the third year, 1 in 37, gradually decreasing in frequency up to the thirteenth year. Race, too, has some influence. Hernia is less frequent in the negro than in the white man, except in the ventral form. Lascars seldom have it. The Irish suffer less from it than the French or Germans, while the Jews are very prone to it. The influence of an abnormally long mesentery is somewhat doubtful. In the monkey and other animals, where a long mesentery is the rule, hernia is almost unknown. A patent funicular process is looked on as one of the most frequent causes of hernia and, yet, man is about the only animal in whom it normally becomes obliterated. A tight bellyband may occasionally act as a predisposing cause. Among the exciting causes may be mentioned constipation, over-distension of bowels, crying, coughing, vomiting, straining from a contracted prepuce, etc.

The diagnosis of infantile hernia is usually easy. The appearance of a tumor at one of the openings, its elastic feel and ease of return, its increase in size in the erect position or during crying or straining, its disappearance in the recumbent position, and, usually, its absence after rest in bed, its impulse on coughing, all point to hernia. Then there is the sharp, violent pain when the hernia appears suddenly; or, when it comes more gradually, the dull, aching, recurring pain or soreness always present when distension of a natural canal occurs.

But there are conditions simulating hernia where the diagnosis is extremely difficult and can only be arrived at by exclusion. In umbilical hernia, we may have dropsy of the funis, malignant growths or cysts. In inguinal hernia, the conditions are sometimes very puzzling, but in all cases the examiner should first assure himself of the presence of the

testicles in the scrotum. If absent from the scrotum, it may be found lodged in the canal or lying just outside the external ring, where it is often mistaken for hernia, especially as it appears to be reducible into the cavity of the abdomen. If it can be brought out of the canal, a light truss should be applied over the internal ring and the testicle encouraged in its descent to the scrotum. Such marked retraction of the testicle as the author mentions I have never seen, but the history of the case should rapidly clear up any doubts. Hydrocele of the tunica vaginalis can readily be recognized by the fact that it is circumscribed, irreducible, elastic and translucent, and from its slow growth from below upward. Congenital hydrocele, or "windy rupture," is much more difficult to differentiate. In this condition we have a tumor in the scrotum which can readily be reduced, but which quickly reappears on assuming the upright position. The absence of pain or tenderness, the lack of swelling or enlargement at the external ring, and the imperceptible reappearance of the tumor while the finger is held over the canal, will help to distinguish this condition. It is important to diagnosticate this, as it materially interferes with the cure of the hernia and cannot be retained by truss. Hæmatocèle is readily distinguished from hernia by its history of traumatism.

"In discussing hernia of early life, it is important that we should have a clear understanding of 'irreducible,' 'incarcerated,' and 'strangulated' hernia;" but the author omits to give the data for a clear understanding of the subject.

When from its shape, the existence of adhesions, or its very nature, a hernia cannot be returned into the cavity of the abdomen, it is called "irreducible" hernia. Intestinal movements are not obstructed nor is the circulation arrested. Irreducible hernia is rare in childhood. When adhesions do occur, they are readily broken up and the hernia reduced.

An "irreducible" hernia occasionally becomes obstructed through the accumulation of flatus, impacted feces, etc., then constituting the condition termed "incarcerated" hernia. The term is also used to denote a partial strangulation of the gut without much pain or intestinal obstruction. This condition, if seen early, is not serious, but if neglected, may rapidly become so. Hence, the advice given by the author is dangerous and, if followed, may end in disaster. He says: "I have found that these cases need cause no uneasiness so long as urgent symptoms are not present; usually after the child sleeps, or during sleep, the mother can by gentle pressure reduce the tumor." "Urgent symptoms" are liable to develop at any moment, and mothers, as a rule, are not sufficiently expert in diagnosis to be depended on.

In "strangulated" hernia, the constriction is so severe as to arrest circulation, paralyze the nerves, and cause intestinal obstruction. If complete, gangrene rapidly supervenes; if less complete, linear ulceration of the parts compressed occurs. Fortunately, it is not a common occurrence in infancy and can readily be overcome without surgical interference. One or two doses of the mixture which has invariably proved successful in my hands will rapidly effect reduction and will prevent the possibility of reduction "en bloc." (See *Medical News* Nov. 28, 1891). If necessary, it can be used per rectum. In infants, it is generally advisable to use an anæsthetic to quiet their struggles. In adults it is not necessary. In cases of intestinal obstruction, it must not be forgotten that a hernial tumor may be found at one of the usual outlets and, yet, it may not be the cause of obstruction. In such cases, reduction by taxis, without relief of the symptoms, will prove that the cause must be sought elsewhere.

In the cure of hernia in infancy, mechanical treatment unquestionably occupies the first place. In adults, questions of expediency or necessity may demand operative interference, but in children surgical measures are unnecessary and uncalled for. Mechanical treatment, properly applied and persistently carried out, will cure all cases of infantile hernia, with scarcely an exception, and the cures will be as permanent as by any operation and without risk.

"Statements that operations are advisable on children, because trusses cannot be worn, are born of absolute ignorance of the mechanical treatment of hernia; as a matter of fact, infants tolerate truss-pressure better if that pressure is intelligently applied, than do adults." Even at the risk of being classed amongst the ignorant, I believe there is a good deal of truth in the claim, *as trusses are ordinarily applied*: the second part of the quotation is contrary to all teaching. Physiology tells us that the nervous system is much more developed, proportionately, in children than any other, and is more sensitive to impressions than at any other period of life. Daily experience confirms the findings of physiology and proves, beyond a doubt, that children react to pressure, or irritation of any kind, more readily than adults. The fact is that symptoms of irritation from improperly applied and unduly severe truss pressure can be found in all these cases, but, heretofore, they have been wrongly attributed to other causes.

The author states that "there is no lack of good trusses in this country." Unfortunately, he does not name some of them. He condemns all side trusses, those where the pad is placed on a descending arm, all soft trusses, and the so called French and German styles of truss. The "cross-body" truss

which he so highly recommends is, in my judgment, particularly objectionable. It is a single truss, whereas in inguinal hernia in children, the truss should always be double, as the predisposing causes to hernia exist alike on both sides. Then the constant motion to which all side-spring trusses are necessarily subjected through muscular contractions, bodily movements, etc., is here intensified on account of the longer arm of the lever; excoriation of the skin is unavoidable; the point of the greatest pressure is outward, against the weakened external pillar of the ring, and downward, increasing the compression of the spermatic vessels between the pad and the pubic bone.

The following quotation represents the most advanced teaching of the present day and explains itself: "Only a light pressure is required if its location is at the right spot. A very common, almost universal error in applying trusses is in putting the pad too low. *If the pad rests over the pubic bone its efficiency is at once destroyed.* It should be borne in mind that the design of truss-wearing is to keep the bowel entirely within the abdomen, and in order to accomplish this in a thorough manner, the supporting pressure must be *very nearly over the internal ring*. The descent of a hernia may be stopped at the external ring; and while it may in this way be kept out of sight, it still occupies the upper part of the canal, and a cure will never result. A truss pad that rests against the bone cannot thoroughly protect the upper part of the canal, *it is held away from it, and the child is made uncomfortable.* When the truss is fitted high, the parts back of the pad are soft and yielding, and it is worn with comfort." Here we have some truths and some misleading statements mixed up. Light pressure only is required if the truss be applied and retained over the right spot, and there is only one right spot, *directly over the internal ring*. The bowel cannot be retained thoroughly within the abdomen by applying the pad *nearly* over the internal ring. *When the pad rests over the pubic bone, its efficiency is at once destroyed, and the child is made uncomfortable.* Here are two truths, the importance of which cannot be overestimated, and the full recognition of which by the profession will mark an era in the correct treatment of hernia. The trusses now in use all infringe upon the pubic bone. Even when applied over the internal ring, they soon sink down until they rest upon the bone. An attempt is made to overcome this tendency to droop by increasing the strength of the spring, but the receding abdominal walls, muscular contractions, and the force of gravity are obstacles too great to be overcome. In the so-called elastic trusses, the pad is anchored over the bone by the perineal band, while, in the lever truss, the pressure is applied from below upward,

thus dilating the upper portion of the canal. The evil effect of these trusses is intensified by the shape of the pad used. In the majority of cases, this is round or conical, and its projecting surface, driven by the powerful spring, bores its way into the opening and actually enlarges it. The flat pad, while not dilating the opening, increases the pressure at its lower edge.

Now, *why is the child made uncomfortable when the truss rests on the pubic bone, as it invariably does?* A glance at the anatomy of the parts will at once reveal the cause. Passing out of the inguinal canal and over the sharp edge of the pubic bone, we find the vas deferens, spermatic arteries and veins, nerves and lymphatics, here covered only by integument and superficial fascia. Right over these important vessels is placed a steady pressure of 2 to 4 lbs., in some cases double, kept on continuously for six months or a year or more. Apply this pressure for the same length of time over any other portion of the body, and only one result will follow: pain, nervous irritability, atrophy, loss of function, etc. So it is here, but more marked, on account of the important organs involved and the peculiarly susceptible condition of the nervous system in children, resulting finally in a lowered vitality which renders them an easy victim to any intercurrent attack. To deny the existence of these symptoms is to gainsay plain facts, proven by analogy and experience. In the past, they have been attributed to other causes, to the "teeth" or "colic," &c., &c., or looked on as unavoidable and due directly to the rupture itself. *Remove your pressure over the pubic bone and the disagreeable symptoms will soon disappear.*

65 West 36th, St.

CASES OF DISLOCATIONS FROM PRACTICE.

By J. W. WILLIAMS, M.D., Columbus, Tenn.

CASE 1. W. Gamble, aged twelve, fell from a fence, February 8, 1861, dislocating the radius and ulna backwards. A physician was called who attempted reduction, but left the arm on a pillow unflexed and unreduced. On September 15, 1861, the lad was brought to me. It was then seven months and seven days since the dislocation. I found complete ankylosis of the elbow joint, and that the coronoid process of the ulna was in the olecranon fossa. My diagnosis was confirmed by Drs. Stone and Cates.

The lad was anaesthetized with chloroform, and the arm was twisted, pulled, flexed and extended, until all the adhesions were broken up. The arm was then flexed over the knee and reduction completed. It was then placed in a flexed position in a well padded splint, provided with screws for flexion and extension.

Movements of flexion and extension were kept up daily for three weeks, at first slight but increased in force as the inflammation subsided. Cold applications were employed continuously. It is now over thirty years since the accident, and the patient has a good serviceable joint, with almost perfect motion.

CASE 2. On May 3, 1868, I was called to see Mr. Samuel Ingram, aged sixty-six years, who had been thrown from his horse forward, striking upon the palms of both hands, dislocating the carpal bones on both sides backwards. The carpus was resting on the radius and ulna. By extension, making traction on the hand, I at once reduced the dislocations with an audible snap. The treatment consisted in the application of two compresses to each arm—the one anterior, the other posterior—secured by bandages. These, however, were left off by the patient in a few days, the result being a slight deformity in the region of the semilunar bone in both articulations. The deformity, I think, was caused from using the limbs before the posterior ligaments had healed. However, the function of the joints was not impaired.

CASE 3. On April 6, 1883, I was called to see Mrs. C. M. W., who had fallen on the knee eight months prior to this date, dislocating the patella of the right leg outward and upward. The leg was slightly bent and crutches were used to aid locomotion. Having placed the limb in the proper position, I rapidly reduced the dislocation by pressure with the fingers. The patient at once was able to walk on the injured limb, and has not had a recurrence of the luxation for nearly nine years. Much of the time during her lameness she had been treated for rheumatism, and the dislocation had not been recognized.

CASE 4. On March 10, 1885, I was called to see Mrs. M. A., of Columbia, Tenn., aged sixty-seven years. She had, while walking in the yard, slipped on the ice and fallen, striking on the palm of the right hand, dislocating the carpal bones backwards, the bones resting on the radius and ulna. I at once sent for my friend, Dr. A. Pillow, of this place, who examined the arm and confirmed my diagnosis. The doctor held the arm firmly while I made extension from the hand, and almost instantaneously the great deformity disappeared with a loud snap that all in the room heard. I had not forgotten the slight deformities in my similar case of double dislocation of the carpus; and we placed two well padded splints on the arm, maintained in position with bandages.

These we ordered kept on for five weeks, and removed daily. Believing that all the ligaments were lacerated we enjoined rest until they had healed. For the adoption of this precaution Dr. A. Pillow and myself were rewarded with a perfect cure in every respect.

Clinical Department.

SCIRRUS OF THE BREAST—HARELIP.

BY JOHN A. WYETH, M.D.,

Professor of Surgery at the New York Polyclinic; Visiting Surgeon to Mt. Sinai Hospital, etc.

THE first patient was a female thirty-five years of age, with a malignant tumor of the breast. She gave no history of her trouble, further than that six weeks previously she noticed a small lump make its appearance on the left mamma. Dr. Wyeth diagnosed the tumor as scirrhus, basing the diagnosis on the age of the patient and the character of the growth. New formations in the mammary gland are more frequently malignant than benign. Adenomata of the gland are rare.

Scirrhus of the breast which is the most frequent of all the varieties of cancer, generally appears, the operator said, as a single, hard lump situated in the gland structure and frequently found deeply embedded in the organ. Two or more such lumps may appear at the same time in different parts of the gland tissue and finally approach each other, so as to form a single nodulated mass. Scirrhus does not, as a general thing, develop rapidly at first, but after it has reached a certain stage, it spreads with very great rapidity and, if not attended to, soon invades the tissues around the breast and the muscles of the chest. Circulation in the remote parts of the gland is interfered with on account of pressure of the tumor, and ulceration takes place. In the later stages of the affection the lymphatic engorgement is more marked and the evidences of compression of the thoracic and axillary nerves more apparent. The effects of pressure are, however, not confined to the nerves alone, but the interference with the return circulation in the axillary vein may give rise to a general edema of the extremities.

The prognosis of cancer of the breast is always a serious, and if allowed to remain without surgical interference, death generally ensues in from one to two years after the appearance of the malady. In rare instances, scirrhus of the breast remains stationary for a number of years after it has attained a certain stage of development, and then again progresses and ends fatally. With an operation performed according to modern surgical procedures, the prognosis is much more favorable. These procedures involve an early recognition of the malady, wide extirpation of the diseased tissue, and careful extirpation of the glands of the axilla. In all cases of cancer of the mammary gland the surgeon should make it a rule to open into the axilla, so as to be sure of the exact condition of

the glands there, for these organs may be the seat of a cancerous infiltration which does not manifest its presence until an incision has been made.

The patient was placed upon the operating table with the chest slightly elevated. The integument of the axilla and of that portion of the mammary gland within the field of operation was first shaved and washed with soap and warm water, afterwards with ether, and lastly with a 1 to 2000 bichloride solution. Sublimate towels were laid over the chest leaving the parts to be removed only in sight. The operator then carefully outlined the tumor, as he said it was essential that the incision should take in from one to two inches of healthy tissue outside the limit of disease. The skin and subcutaneous tissues were divided down to the muscles, each vessel being tied with catgut sutures as soon as it was cut. All oozing of blood was arrested by pressing sublimate towels into the wound as the operation was proceeded with. After careful dissection the tumor was then lifted out *en masse* and removed.

The dissection, after removal of the neoplasm, was continued into the axillary region. An incision was made from that end of the elliptical wound in the breast nearest the axilla, parallel with and below the border of the pectoralis major muscle, and extending as far as the arm. The integument below this incision was dissected up from the underlying areolar tissue to the posterior fold of the axilla and the diseased glands removed. A good sized rubber drainage tube was inserted into the wound, and after it had been closed by sutures the cavity was flushed with sublimate solution of the strength of 1 to 3,000. The wound was then dusted with iodoform powder and the usual dressing applied. These dressings will be permitted to remain *in situ* for a period of ten days, when they will be removed and may then be left off permanently.

The next patient was an infant four months old, which was brought by its mother to Prof. Wyeth's clinic, suffering from a congenital cleft of the upper lip. This cleft, the operator stated, was due to an arrest of growth in the structures of the upper lip. The only cure of the deformity lay in a resort to a plastic operation which should be done as early as practicable. Infants who are well nourished and healthy should be operated upon at birth, or as soon thereafter as possible, while in the case of sickly and poorly nourished children the operation should be deferred until such a time as the patient has been brought into a favorable condition.

The lecturer stated that there are numerous methods recommended for performing the operation for harelip; but the main feature in all these different methods consists in trimming the edges of the

cleft in such a manner that when they are drawn together the defect will be closed and no depression will be noticeable in the vermillion border of the lip.

The lip in this instance was dissected away from the bone, after the child had been placed well under ether, and the intermaxillary bone was broken in the median line. The broken parts of bone were then approximated, so as to cover up the defect in that structure. No sutures were used to bring together the fragments, as the operator said the pressure of the lip would be sufficient to keep them in apposition. The edges of the defect in the lip were next freshened and coapted, a small triangular incision being made on each side. Three strong silver wire pins were then inserted into the margin of the lip at a distance of about a quarter of an inch from the cut surface. These were passed through the lip and brought out at a corresponding point on the opposite side. A figure of 8 silk suture was next wound about these. The pins will be removed in the course of four or five days, at the end of which time it is believed that union will have taken place.

LACERATIONS OF THE VAGINA.

BY GEORGE M. TUTTLE, M. D.,
*Professor of Gynecology at the College of Physicians and
Surgeons, New York.*

GENTLEMEN:—The first patient I will show you to-day is a German woman, forty-two years of age, who has been married seven years and has given birth to five children. She has had two miscarriages, the last one occurring six years ago. She commenced to menstruate when fourteen years of age, and has menstruated regularly up to the present time. Now, however, for the first time she has gone past her monthly sickness.

This patient is a woman of good physical appearance. Her present illness dates from the birth of her first child, six years ago. She complains now of pain in the lumbar region, bearing down pain in the pelvis, which she describes as of a colicky character, and frequency of micturition, and occasionally pains on passing her water. She also complains of the presence of a tumor which protrudes from the vulvar region, and which gives her pain at times. She tells me with great distinctness that she first noticed this tumor two years ago when it began to interfere with sexual intercourse. It was, she states, twice its present size and came out gradually.

Oftentimes, in these cases of inside tear of the vagina, we do not get the history of a single injury, that is, that the delivery of one child has given rise to the trouble, but that the woman has had rapid

labors. This woman has been in the family way at an average of once a year and the parts have been kept at work all the time, until they have become so relaxed that they protrude.

I will now push back this protrusion and try and show you the condition of the external parts. I want to call your attention to what an admirable perineal body this woman has. The perineal body externally is, as you see, an excellent one, yet we have one of the worst forms of tear in this woman, and one that gives the worst symptoms of any we can meet with. It is an inside tear and probably occurred with the delivery of her first child.

On the right side the levator ani is torn away from its attachments to the vagina, and this allows the vagina to come down as it has no further support. The same is true on the other side, as we readily find on examination. So, we have here a protrusion of the posterior wall of the vagina.

We will now see to what extent the rectum is involved in this trouble. A way of testing this is to pass the finger into the rectum, push the finger forward, and you can now see from the movements of my finger that there is a marked bulging of the wall. Therefore, we have a prolapse of the posterior wall of the vagina, with rectocele.

Now, in addition to these two conditions have we anything else here? Yes, we have a very unusual condition present. Placing my finger upon this mass I feel that it is an inch and a half, and possibly more, in thickness. As I press it you will notice a yellowish fluid exude from the interior. A probe passed through the aperture shows there is quite a large space inside this mass. There are no symptoms of an acute inflammatory disturbance. We have here that rare condition known as an abscess of the recto-vaginal septum.

Now, how has this been brought about? I will give you a few explanations of the origin of this trouble. In the first place, here is a part which has become relaxed and prolapsed. Any part that protrudes between the woman's thigh, is necessarily exposed to dirt, friction and injury. She has not been advised to push the protrusion back and keep it clean, and consequently has failed to do so. It may have suffered an injury or been bruised to a certain extent. This abscess may also be due to infection from the rectum. It is also possible it may have begun as an ischio-rectal abscess.

These then are the possible causes of this trouble. She has come here for the relief of dyspareunia which renders sexual intercourse painful or impossible, and is, in this case, a cause of sterility. So, from this one cause alone, you can see for yourself the great significance of an inside tear, and I do not think

that I could show you another single case illustrating so completely the trouble arising from this condition as the one before you.

The next patient is a woman thirty-three years of age, who has been married nine years. She has had two children, the last one being born nine months ago. She commenced to menstruate at the age of fifteen. Her menstruation is regular and previous history good. She complains of the following symptoms:

She has pain in the lumbar and iliac regions; her bowels are costive, and she also involuntarily passes gas; she is troubled with vesical tenesmus—that is, after the passage of her water, there is contraction of the bladder and more or less pain. One most important feature in her trouble is that since her first baby was born, the delivery of which was instrumental, she has lost control of her bowels.

As I draw aside the vulva in this case, you can see stretching across a white band of tissue; you can also see a distinct groove on the woman's right side.

It is at this point the muscle was torn right down the median line; then scar tissue was formed, bridging across it, and you have a hollow sulcus with a little groove on either end, showing how far the sphincter ani has been torn. The symptoms of this woman are explained entirely by what we see in this case. This illustrates a moderate tear of the sphincter with partial control of the bowel.

ULCER OF THE LIP—CHRONIC URETHRITIS AND ITS TREATMENT.

BY ARPAD G. GERSTER, M.D.,

Professor of Surgery at the New York Polyclinic, Visiting Surgeon to Mount Sinai and the German Hospital, &c.

GENTLEMEN: The first patient I show you to-day, is a man fifty-five years of age, who suffers from a large ulcer on the right half of the lower lip, which, he tells us, has been spreading for a period of a year and a half. As you look at this sore you will notice that its edges are sharp and granulations are springing up all around, but still it never seems to granulate completely. There is apparently a molecular decay going on, and more than what nature supplies is destroyed. This defect is growing larger all the time.

I have examined the submaxillary region to see if there is any enlargement of the glands there, and find that there is none. But this is not surprising, for we find in epithelioma of the lower lip frequent immunity from secondary lymphatic involvement. Nevertheless, this immunity has its limits, and the time is certain to come when the glands become infected.

Now let me ask you the question, is this diagnosis of epithelioma established beyond any doubt in this

man's case? That is a question that should always be raised in your minds, for no medical man is infallible, and we all are liable to make mistakes now and then. But if this is an epithelioma and we are certain of our diagnosis, there is but one course to pursue, and that is to remove the growth as quickly as possible.

But if, on the other hand, this is no epithelioma, what then can it be? Although this condition has existed for a year and six months, it may still be a gummatous swelling that has broken down, leaving behind the defect which is now present. I have seen gummatous swellings and tuberculous syphilitides persist for a very long time.

Now the differential diagnosis in a case like this, from the clinical appearance alone, is a very difficult one, especially where we do not find any glandular infiltration. I would therefore be inclined to entertain a doubt of its malignity and allow time to settle the question. If the glands were enlarged, I would unhesitatingly make a diagnosis of epithelioma and exclude a specific affection. Should anti-syphilitic treatment not bring about an improvement in the appearance of this ulcer, we can then be certain that it is malignant in character; for gummatous swellings improve markedly under large doses of iodide of potash. This is always a wise course to follow when we are in doubt in such cases; furthermore, it will do no harm to the patient to subject him to the brief test of the iodides. So in this case, we shall administer fifteen grains of iodide of potash three times a day, and if, when the man comes back again to the clinic, there be no marked change in the appearance of the ulcer, the assumption then will be that it is an epithelioma. In order to make doubly sure of our diagnosis, we shall now excise a little portion of the ulcer, and send it to the laboratory to be hardened and have sections made of it.

If we find this to be an epithelioma, we shall in operating be guided by the principles laid down in such cases. We must pay no attention to whether the operation disfigures the patient or not; we have to eradicate a deadly malady, and before this one fact everything else must give way. When you resort to a radical procedure, then be radical in your methods; for it is much better not to undertake it at all, than undertake it and make a disgraceful failure. Be radical then, give the growth a wide birth, keep one inch away from the diseased margin and pay no attention to the defect you may leave behind. When you have created a large defect and the cicatrical contraction is great, then it will be time afterwards to consider the necessity of repairing this loss of substance by a plastic operation.

There is one other point I must not omit to mention in this connection, for it is a point of great importance, and one very frequently neglected by the surgeon, to the great detriment of his patient. Whenever you operate for cancer, you do not perform a radical operation unless you remove at the same time the contiguous lymphatic glands. This is a principle that is well established as far as cancer of the breast in women is concerned. If you remove a cancer of the breast, you must remove the axillary glands as well, for otherwise you have not performed half your duty to your patient. When you are operating for cancer of the lip, never neglect to remove the contiguous glands, for it is in just such cases that you get your relapses.

We shall in this case, extirpate the epithelioma, if it proves to be one, expose the submaxillary glands, and take them out, thereby guarding our patient against the chances of a relapse.

The next patient is a young man who suffers from chronic inflammation of the deep urethra. He came here some days ago suffering from frequent urination, and we used deep injections of permanganate of potash, but without producing the desired effect. We then employed a five per cent. solution of nitrate of silver, and he can now hold his water for six hours at a time, while previously he was compelled to urinate every fifteen minutes. We have made altogether four injections in his case.

This is a very gratifying result, and those of you who have to treat these cases of deep urethritis, with burning in the anus, pain in the region of the perineum and frequent urination, will appreciate the advantages of this form of treatment.

The applications are made after the patient has urinated. He is placed on his back, the injector introduced beyond the cut-off muscle, and inserted in the neck of the bladder, but not into the bladder. It must be in the space between the cut-off muscle and the sphincter of the bladder. As I hold this instrument at an angle of forty-five degrees with the horizontal plane, it is in the neck of the bladder; and I would have to depress it further and push it on to get it into the bladder itself. It is in this portion of the urethra situated between the cut-off muscle and the sphincter that the trouble lies, and it is there that your medication must be made to produce any beneficial effect.

When a patient comes to you suffering from frequency of urination and a history of gonorrhœa, with scarcely any discharge, let him urinate into a tumbler and you will find that the urine contains shreds. If you give him a urethral injection of the ordinary sort, it will do him no good whatever;

for the trouble is not in the anterior, but in the posterior portion of the urethra. We divide the urethra, not as the anatomist does, into the pendulous, bulbous, membranous and prostatic portions, but into the anterior and posterior urethra.

In the books of anatomy the important function of the cut-off muscle is not mentioned at all, and one might be led to suppose that, because it is a little muscle, it is of little importance. This cut-off muscle is the one that controls the function of the bladder, and not the sphincter, which is, as you know, located within the prostate. If an inflammation of the anterior portion of the urethra passes this barrier of the cut-off muscle, and involves the deep urethra, there are other symptoms added to the general symptoms of gonorrhœa. A general practitioner might say the patient had a cystitis. This man has no cystitis. He has no fever, his urine is normal, and is only charged with the pus from the urethra.

In cases of deep-seated urethritis following a gonorrhœa, apply weak solutions of permanganate of potash, 1 to 2000, through a soft instrument, to that portion of the urethra beyond the cut-off muscle, and you will soon find a marked improvement in the condition of your patient. The rule is in these cases that the second application should be made before the effects of the first have passed away. Have the patient return the second day, and if the frequency of urination has subsided very much, then wait for the next day, having ascertained how long the effects of the first irrigation have lasted. In accordance with this you can direct your subsequent treatment.

In very chronic cases you have to resort to the method we have adopted here. From three to five minims of a five per cent. solution of nitrate of silver should be injected once a week, twice a week, or three times a week, according to the urgency of the case.

I have seen well informed physicians attempt to cure cases of chronic urethritis of this kind by the introduction of full-sized sounds. You may aggravate the trouble, may make it worse, but you cannot cure it. In the treatment of urethral trouble, you must be guided by a clear understanding of the existing condition. This is a subject that is much neglected, but it is one that enters to a great extent into the daily practice of many physicians, and it is quite well worth your while to give it your earnest attention.

Brunner (*University Med. Magaz.*) concludes that any method of wound treatment which does not preserve the sterile catgut from secondary infection is inefficient. Catgut will retain its place in surgery along with silk, but it should only be used after being thoroughly soaked in an efficient disinfectant.

Abstracts and Selections.

A NEW METHOD OF SKIN GRAFTING.

By PRINCE A. MORROW, M. D.,
Surgeon to Charity Hospital.

The discovery by Reverdin that bits of tissue might be entirely ablated and successfully grafted dates back but little over twenty years. This method constitutes a most valuable addition to the resources of surgery in the healing of large surfaces after injuries and operations. The opinion was for a long time held that the smaller and more superficial the bits of transplanted tissue, the more favorable the chances of success. More recent experiments have shown that this limitation of the superficial area of the graft was entirely unnecessary. By the improved method of Thiersch, epidermal grafts several centimetres in length or breadth may be successfully employed. The limitation of the depth of the graft is, in my opinion, equally fanciful. My own experiments have shown that deep grafts unite readily and perfectly, provided there be an accurate coaptation of the new material with the adjacent parts.

As dermatologists we are interested principally in the bearing of these facts upon the surgery of the skin. I propose to briefly call attention to a new method of skin grafting which has, I think, an exceedingly valuable, though somewhat restricted, range in cutaneous surgery.

The peculiarity of the method consists (1) in the depth of the graft, which includes the entire thickness of the skin and in some cases a layer of subcutaneous tissue; (2) in the method of procedure, which consists in removing a button of tissue of any required depth by means of a round cutting instrument known as the Keyes cutaneous punch, and immediately inserting it in a receptacle or bed previously made by the same instrument.

In this way there is obtained perfect coaptation of graft with the base and margins of the surrounding tissues, thus insuring the most favorable conditions for immediate union of the parts. In fact, the absolute accuracy with which this may be done leaves nothing to be desired from a mechanical point of view.

Some eighteen months ago I was led to devise this method by the importunity of a patient who had become somewhat hypochondriacal on account of the disfigurement of an ugly scar on the side and back of the scalp, the consequence of a severe burn received in infancy, forty years previously. He had been able

to conceal the scar by combing the hair of the opposite side over it, until the rapid thinning of the hair from premature alopecia rendered this dissimulation no longer possible.

I first ordered a closely fitting *toupee*, which concealed the deformity with some degree of success, but as it was difficult to retain in position and was otherwise objectionable to the patient, he besought me to attempt an operation for its cure. The only expedient which suggested itself to me was the insertion of hair-bearing tissue in the bald patch. So far as I was able to ascertain, medical literature does not record a single instance of the successful grafting of skin capable of producing hairs. In all cases where skin with hair on the surface has been used in grafting, the hair invariably fell out and was not reproduced; there was at the same time a loss of the secretory and other functions of the skin, showing a complete destruction of the follicular structures.

A successful issue in this case was rendered improbable by the character of the soil—an old cicatrix of forty years standing, consisting of hard, dense, fibrous tissue, with a scant vascular supply.

These difficulties were explained to the patient, as well as the improbability of success, but he insisted on the experiment being tried, assuming the entire responsibility of a probable failure.

In this case I first took a number of grafts from the opposite side of the patient's scalp and implanted them in the scar tissue. To my gratification, I found that union promptly occurred. I then waited several weeks in order to ascertain whether these ingrafted portions would produce a growth of hair, and found that the grafts undoubtedly grew hairs.

The practicability of the idea having been thus satisfactorily demonstrated, I next removed larger and deeper grafts from the scalp of another individual, who, for a sufficient pecuniary consideration, was prevailed upon to supply the material. These all took perfectly, and, after the lapse of several months, there was sufficient evidence of the growth of hair in a number of the grafts to induce the patient to ask a continuance of the treatment.

A few words as to the details of the operative procedure may be appropriate here. The hair over the limited areas from which the grafts are to be taken is cut short, and these surfaces, as well as that in which they are to be implanted, are thoroughly scrubbed with soap and hot water, and afterward washed with a sublimate solution. The operation is conducted in every detail antiseptically. The first step is to prepare a bed for the reception of the grafts. With a slight rotatory motion the punch may be made to penetrate to the desired depth, and the included button of tissue is grasped in the center with

a mouse-toothed forceps, lifted up, and separated from its underlying attachments with a sharp bistoury or scissors curved upon the flat. There is but slight bleeding, which soon ceases under pressure with absorbent cotton; it is better to wait a few minutes until this subsides. A similar procedure is followed in the case of the graft to be implanted. As it is necessary to include all the follicular structures of the scalp, which penetrate deeply in the occipital region, each button was fully a quarter of an inch or more in thickness. This is immediately inserted in the receptacle already prepared, care being taken that the axis of the hairs are properly directed. The graft is fixed accurately in position and slight pressure maintained with a smooth spatula for a few minutes. After the desired number of grafts are inserted, each is retained in position by means of a thin covering of rubber tissue, the edges of which are moistened with chloroform. This substance, being transparent, permits a satisfactory inspection of the condition of the parts beneath; over this is placed a layer of borated cotton. A bandage completes the dressing. The holes from which the grafts have been taken are filled with iodoform and covered with adhesive plaster. They heal promptly, and become almost entirely obliterated by cicatricial contraction.

At the first inspection of the grafts twenty-four hours later, they are usually found to be firmly agglutinated, as may be determined by pressing on them with the point of a probe. Sometimes a little serum exudes from the sides, which may be absorbed by a cotton pledget, lifting up one edge of the rubber tissue for that purpose. For two or three days they may be dusted with iodoform. In no instance have I detected any purulent exudation. Ordinarily within a few days the grafts are firmly united, and cannot be detached without using force. They present a reddish hue, for some time, which gradually fades out, and after several weeks the line of demarcation is scarcely seen.

The operation may be rendered absolutely painless by injecting a few drops of a cocaine solution. This does not interfere with the vitality of the graft. The only inconvenience I have found is a slight tumefaction of the part, which interferes with perfectly accurate coaptation. This may be obviated by the cataphoretic introduction of cocaine or by general anaesthesia.

In the last operation upon this patient the person furnishing the grafts insisted upon being etherized, and, in order to get through with him as soon as possible, I removed six grafts in succession, and, instead of immediately inserting each one as it was removed, I placed them in a solution of salt and tepid water for several minutes. This delay did not affect the

result, as they all united promptly and perfectly. I learn from a letter received from the patient a few days ago (September 17th) that the hairs fell out from this last series of grafts and have not been reproduced. He further says: "There are some hairs growing in the former grafts. No doubt about that. I will say I would very gladly go on with the operation if I could be assured of success in the end." No further operative measures have been attempted owing to the impossibility of securing suitable material, as the patient's hair is difficult to match in tint and texture. Another serious difficulty was encountered in obtaining a sufficiently deep bed in the thinned contracted scar tissue in which to insert the grafts.

While the operation in this case has not yielded the most brilliant result, so far as a cure of the deformity is concerned, it has demonstrated the fact that it is perfectly practicable to ingraft deep sections of skin containing the follicular apparatus, preserving the integrity of their anatomical structure as well as their functions. Unfortunately, in small grafts the changes inseparable from the processes of union and cicatrization cause more or less contraction of the transplanted tissues and tend to obliterate the hair follicles, more especially in the peripheral margin of the graft. This destructive change is less manifest in the central portion, which would justify the assumption that a graft of considerable area would in all probability produce an abundant and vigorous growth of hair. The most available material for grafting an extensive surface would be the scalp of a person recently deceased.

The punch used in this case was about 35 to 40 mm. in circumference. A slightly smaller instrument was employed in preparing the receptacle, owing to the tendency of the button of tissue to contract. I have not used larger instruments, because the person furnishing the material stipulated that the resulting scars should not be readily perceptible. I am persuaded that much larger grafts would unite just as readily and perfectly. Rectangular or other shaped instruments might be used if desired.

The demonstration of the practicability of successfully grafting deep sections of the skin with the complete conservation of the integrity of the follicular structures has, on account of the necessary limitations of its employment, a curious rather than a practical interest. The method has, in my opinion, a much more valuable application. I believe that it constitutes an ideal treatment for circumscribed malignant and papillary growths occurring upon the face, where cosmetic considerations play an important role in determining the choice of an operation. Small epitheliomata, lupus nodules, moles, warts, and other facial blemishes may be removed and pieces of

smooth, healthy skin substituted with the absolute certainty, if the operation is carefully done, of securing immediate union without the puckered, disfiguring scars which follow cutting and cautery operations. In one case where I removed a small epithelioma above the right superciliary ridge and replaced it with tissue from the patient's arm, the operation was entirely successful. After the lapse of several months there has been no recurrence of the disease. The line of union is scarcely traceable, and it would be difficult to identify the new tissue.

The operation is more especially indicated in epitheliomata of recent development and limited area when the cancerous infiltration has not invaded the surrounding tissues. Even when the disease is more extensive, the epitheliomatous nodules around the edge may be punched out one by one and sound tissue substituted. I believe that the advance of the disease may be often checked in this way, as the healthy tissue from another surface does not so readily undergo degenerative changes. Healthy skin may be readily grafted on cancerous tissues. As a matter of experiment, I have inserted a number of grafts in the infiltrated edge of an inoperable cancer. The inner segment of the graft rested upon diseased tissue, while the outer segment was imbedded in apparently healthy tissue; the grafts united perfectly, and, in the further extension of the morbid process, the ingrafted tissues resisted the encroachment of the disease much longer than the other portions.

The method also finds a special application in cases where, after complete cicatrization and apparent cure of an epithelioma by operation, there is a redevelopment of the disease at one or more points in the cicatrix. If these diseased spots are replaced by healthy tissue, the chances of complete cure are materially strengthened,

I have not yet found a suitable case of lupus vulgaris in which to try this method, but I should think that in cases where the disease is circumscribed the lupus nodules might be punched out and healthy tissue inserted, leaving much less disfigurement than results from their destruction by curette or cautery.

Also warts and moles on the face and exposed parts which, besides their disfigurement, are prone to take on malignant degeneration, especially in persons of advanced age, may be removed and smooth, healthy skin be substituted without leaving the unsightly scars which would follow their removal by excision or caustics.

The range of application of this method with certain modifications might be still further extended. I believe that in the case of extensive epitheliomas or lupus, which have been removed by excision, instead of allowing the wound to heal by granulation with

consequent cicatricial contraction, a much better result would be obtained by covering it with healthy skin, carefully cut to secure accurate coaptation. Such tissue would be less apt to become the seat of recurrent disease than the connective tissue formed by granulations.

While union takes place more promptly and perfectly where the grafts accurately fit into the place of the displaced tissue, and corresponding anatomical layers are brought in the same plane of apposition, yet the skin may be successfully grafted over muscles, fascia, cartilage, or bone. In a recent case in which a cancerous eyeball had been removed, and the disease had recurred in the orbit, involving the antrum of Highmore, rendering it inoperable, I inserted a graft at the inner canthus of the eye and two or three along the inferior margin of the orbit. The punch in each instance penetrated to the bony surface, but the buttons of implanted skin readily united. The graft at the inner canthus still remains, while the others were finally disintegrated and swept away by the cancerous process.

In closing, I may call attention to one point to which reference has already been made. The injection of cocaine, I have said, is apt to cause a slight swelling of the graft which interferes with accurate coaptation. To obviate this inconvenience, I have in a number of instances resorted to the cataphoretic introduction of cocaine. This was done by placing discs, made of one or two thicknesses of blotting paper saturated with a ten-per-cent. solution of cocaine, over the platinum surface of an electrode specially designed for this purpose by Dr. Peterson, of New York. With a current of five to fifteen millampéres complete insensibility is secured within a few minutes. This action is materially hastened by puncturing the surface at one or two places with the point of a needle, which causes more rapid penetration of the solution.

N. Y. Medic. Journ. Dec. 12, 1891.

SOME REMARKS ON THE TREATMENT OF ELBOW FRACTURE

BY A. HANBURY FREKE, M.B., C.M. Edin.

I may here draw special attention to the fact which, though well known, is apt to be lost sight of just when it ought most to be remembered: I mean the fact that the *normal arm is not straight*. The trochlear portion of the humerus being lower than the capitellum, the axis of the articular surface of the humerus is not horizontal, but *oblique*; consequently the forearm makes with the arm an outward obtuse angle at the elbow. The importance of this cannot be over-estimated, for a change in this normal

angularity is the essential part of the deformity so often seen after elbow fracture that has been treated in the bent position. The most successful method of treatment, therefore, will be that which best preserves the normal angularity of the limb. As to symptoms and diagnosis I need not refer to them, but I think Packard is right when he says that "no class of fractures demands more care, tact, and judgment for their detection and discrimination than those involving the elbow-joint." With regard to prognosis I believe that faulty reduction and unsuitable position in the treatment generally adopted render it far graver than it would otherwise be.

I do not write as an authority, but I have collected a very large amount of information bearing on the subject, and my chief right to be heard must be that, in the words of that great surgeon, Robert Liston, "the greatest number of well assorted facts on a particular subject constitutes experience, whether these facts have been culled in five years or in fifty."

1. THE FLEXED POSITION.

This may be taken to include the rectangular and the fully flexed position. Now whilst this is at present the orthodox method of treatment for all cases of elbow fracture, except that of the olecranon, I find that this method has not always given that satisfaction which would merit its universal adoption. It is very frequently followed by most unsatisfactory results, and there are now those who believe that the bent position is unsuitable in most cases of elbow fracture. The profession does not seem to be at all impressed with the fact that *deformity* of the elbow is very frequent indeed after treatment in the bent position, especially the rectangular.

The cause of this deformity has been very clearly and forcibly demonstrated by Allis. In fact any who takes the trouble to look into the literature of this subject cannot but be struck with the enormous number of cases that have been recorded, showing sometimes impaired movement from mal-position of the fragments, and in most cases deformity as a result of the ordinary method of treatment. The common deformity in these cases is either a loss of the normal obtuse angle at the elbow, or a substitution for it of an angle in the opposite direction. I have myself seen cases showing this deformity and I have been told of many others.

In transverse fracture above the condyles, the lower fragment being entirely at the mercy of the forearm, there must be great danger of displacement with the arm at a right angle, for the slightest jar on the hand or forearm would drive the lower fragment backward. This has led some surgeons to adopt the fully flexed position in these cases. But whilst the chief aim seems to be to bring forward the lower

fragment, surgeons appear to forget that the mere act of flexion may carry this fragment too far forward. In the bent position of the arm it is impossible to tell how much flexion may have occurred through the line of fracture. Thus Lauenstein describes and figures the dissection of a case in which the elbow-joint was supposed to have been flexed when the splints were applied, but it was really extended, the flexion having been through the line of transverse fracture just above the trochlea. The fracture had united so that the trochlear fragment was fixed at right angles to the shaft of the humerus, and the patient had thus lost the power of extension movement. So much, then, for antero-posterior displacement. But I would point out that displacement of the lower fragment may occur in another direction—viz., laterally. As Allis shows, the bones of the forearm being on a different level, the pressure on them by the ordinary splints and bandages used for the rectangular position will be unequal. The result is a lateral displacement of the lower fragment, thus altering the direction of the axis of the lower end of the humerus. On the same principle it is easily seen how in separation of either condyle the tendency will be for the inner one to be elevated and the outer depressed, thus giving rise to the same deformity.

I believe that this tendency to a side-to-side rocking of the lower fragment or fragments in fractures at the lower end of the humerus, or twisting in case of fracture of the olecranon, is a great cause of deformity from the bent position for this reason: flexion of the forearm upon the arm brings the hand to the middle third of the clavicle (see Morris); any further movement of the hand towards the middle line of the body is caused by rotation of the humerus at the shoulder; when, therefore, the arm is bent to a right angle, or still further flexed across the chest, there must be rotation of the humerus at the shoulder: but in a case of elbow fracture this rotation, instead of occurring at the shoulder would be very apt to take place at the seat of fracture, so that however well the fracture may have been set in the first instance, as soon as the arm is flexed there is likely to be displacement of the fragments. And further, this displacement would never be detected so long as the arm is in the bent position, but would at once become apparent on extending the limb. In all the cases of deformity that I have seen the arm looked perfectly normal when flexed.

In cases of dislocation of the elbow, it is often extremely hard to make out whether or not there is fracture as well. It becomes a question, therefore, whether it is not dangerous to treat dislocation in the bent position. At any rate, so long as the flexed

position is the orthodox one for all injuries of the elbow, so long will the danger exist of fracture, which has been overlooked, being left in such a position that union is either faulty or absent altogether.

The fully flexed position is open to the same objections as the rectangular, and, in addition, there is great danger of interference with the circulation of the limb, and the important structures in front of the joint are likely to become entangled in the callus (Lauenstein).

Let me repeat that, with the arm in the bent position, the surgeon can only hope that all is going well. He cannot be sure that the fragments are in good position; in fact, the probability is they are not. I do not say that the flexed position can never be used with safety; but what I do say is that the present method of treating all injuries of the elbow in the flexed position is a very dangerous *routine* practice. Thus, to sum up:

1. The plea of convenience alone will not support the flexed position.

2. However carefully reduction may have been accomplished, when the arm is flexed we cannot be sure that the good position is being kept up. However great the displacement, it will never be detected so long as the arm is bent.

3. To put the arm up at right angles "for fear of ankylosis," is an admission of weakness. The chief cause of stiffness and ankylosis would appear to be imperfect reduction of the fragments. Since the rectangular position favors displacement, it follows that such a position is rather conducive to ankylosis than otherwise.

4. I conclude, therefore, that the rectangular position is the worst that could be adopted; that the fully flexed position has many serious drawbacks; and that it would be far better to adopt a method which ensures accurate coaptation of the fragments, and thus diminishes the risk of ankylosis to a minimum, and, above all, obviates deformity by keeping up the normal angularity of the limb.

5. Such a method we have in the extended position, which has already, in the hands of those who have used it, proved eminently satisfactory, and of which I shall speak in the next part of this paper.

II.—THE EXTENDED POSITION.

I find that a good deal has been written in favor of the straight position in the treatment of elbow fracture—thus Liston says: that "fracture at the distal extremity of the humerus is most conveniently managed in the straight position." M. Coulon, a strong supporter of the rectangular position, suggests that in some cases of transverse fracture above the condyles, the extended position would best keep up

reduction. Berthomier published a pamphlet advocating the extended position in all cases of elbow fracture except that of the external condyle, in which he says the fully flexed position is best. Allis, in his pamphlet, not only shows the frequency of deformity, and how it is brought about in the flexed position, but also that this deformity may be entirely avoided by using the straight position.

Dr Fifield, of Dorchester, (U.S.A.), to whom I am indebted for much valuable information on this subject, and many most interesting letters, says, with regard to the straight position. "This is a subject on which I have talked, lectured, and written for a good many years, fifteen or twenty at least." Amongst others who support the straight position I may mention Drs. Illingworth, Lauenstein, and Nunn.

Now all those who have adopted the straight position have done so on account of the frequency of deformity, and in many cases, the great stiffness after treatment in the flexed position. The cause of all the trouble is displacement of the fragments—*i.e.*, a want of accurate coaptation of the fragments during the process of repair. Thus, the first and most important point is to obtain as perfect reduction of the fragments as possible. Secondly, in keeping the parts in good position, we must be careful to maintain the normal angularity of the limb.

This can only be done with certainty in the extended position. With the arm straight we can at once see what is displaced, and whether our reduction is being kept up: the fragments can be manipulated and moulded into their proper places far better in the straight than in the bent position. In transverse fracture above the condyles we get a better reduction, and therefore render retention easier with the arm extended. In fracture of the internal condyle, in the straight position, the head of the radius abuts against the sound outer condyle, and by its leverage with the ulna prevents the inner one from ascending (Allis). For fractured outer condyle, whilst Fifield and Berthomier believe the fully flexed position to be the best, yet this fracture has been successfully treated in the extended position. A case is reported from F. H. Hamilton's clinic in which it was found necessary to place the arm in the extended position, and Hamilton speaks of having seen two other cases like it. For fracture of the olecranon I think most will agree that the straight position is the best.

So long as they obtain good movement most surgeons seem to care nothing for deformity. I hold that we ought not to be content with conserving good motion only. We have seen that the flexed position is very frequently followed by deformity.

The straight position has been found to obviate this deformity. I fail to see, therefore, why there should be such a prejudice as there seems to be against the straight position.

The *want* of accurate coaptation makes the rectangular position dangerous; the certainty of perfect reduction renders the extended position safe.

Now supposing stiffness and ankylosis to be due to arthritis, if the fragments heal in good position there will be less arthritis, and therefore less tendency to stiffness. The more perfect the reduction, the sooner the fracture will heal; the sooner healing takes place, the sooner will passive motion be permissible. It follows, therefore, that the extended position will obtain a much earlier return to usefulness than the ordinary treatment. It is much easier for the patient to flex an arm that has healed in the straight position than to extend a stiff flexed elbow.

In employing the extended position the forearm may be placed in supination (Allis, Fifield, Berthomier), or in pronation (Illingworth, Lauenstein). Those who adopt the former claim that they are keeping up the normal outward obtuse angle at the elbow. I would point out, however, that this angle is formed by the humerus and ulna; it is still present, therefore, whether the forearm be prone or supine. It is extremely painful to hold the arm for any length of time with the forearm extended and supine, because of the tenseness of the biceps tendon and other structures in front of the joint.

In the treatment of fracture of the olecranon we are taught to put the arm up in the extended and supine position; we are also warned against the danger of over-extension. I say, therefore, put the arm up extended and prone and we avoid all these difficulties.

With the arm in extension and pronation, the extensor muscles cannot act beyond a certain point, and any further action in this direction moves the arm back as a whole, firm, rigid, and fixed, as though it were composed of one long straight bone. There is none of that discomfort which is felt when the forearm is supine. As Dr. Illingworth points out, the outward configuration of the arm becomes practically straight, so that instead of a complicated angular splint, a simple straight one can be applied; whilst, therefore, we are keeping up the normal relation of bone to bone, we have at the same time an arm that is much more easily dealt with than when the forearm is in supination, and we avoid the danger of over-extension. As Morris says, "pronation is a position of the greatest elegance and grace, and one most agreeable to the eye as well as to the feelings."

THE ADVANTAGES OF THE EXTENDED POSITION ARE:

1. Certainty of reduction.
2. Less tendency, therefore, to stiffness or ankylosis, and a much earlier return to usefulness.
3. It obviates the deformity so frequently seen after the present treatment.
4. Being suitable for all fractures of the elbow, as well as for dislocation, it avoids the danger of a fracture which has been overlooked being left in such a position that union is either faulty or absent altogether.
5. It offers a far safer routine practice than the rectangular, which ought rather to be called the "wrong angular" position, and it will thus prove of the greatest value to the general practitioner.—*Provincial Medic. Journal*, Jan. 1, 1892.

THE ETIOLOGY AND THERAPEUTICS OF RUPTURE OF THE UTERUS.

BY DR. SCHULTZ, BUDAPEST.

THE author reports fourteen cases of rupture of the uterus which he observed in the clinic of Prof. Tauffer. Of the patients thirteen were multipara, one a primipara. The pelvic outlet was obstructed in only two of the cases, in one by an osteoma, and in the other by osteomalacia; in two others there was moderate narrowing. Head presentation occurred in 69 per cent. of the cases, transverse in two cases, face in one, and breach in another case. In some cases of rupture the duration of labor was very short, in other cases where labor was extremely protracted rupture did not take place. The author, therefore, reaches the general conclusion that pelvic obstruction and precipitate labor can only be regarded as predisposing causes of uterine rupture, the real cause consists in structural changes in the cervix (cicatrices and diminished elasticity due to previous child-births).

As regards therapeutics, the prophylaxis should not be lost sight of. Aside from proper management of the labor, this comprises a careful consideration of the signs of threatening rupture. These are: sudden restlessness of the patient, accelerated pulse, high position of the fundus; the presenting part can be distinctly felt through the abdominal walls. A transverse fold indicates the formation of the "contraction ring." On vaginal examination, when the finger is pressed upward, the thinned cervix and contraction ring can be felt at the side of the presenting part. If these symptoms occur, the labor should be at once terminated, even if it becomes necessary to sacrifice the child. In four cases report-

ed by Schultz, where the child's head was perforated, a threatening rupture was thus prevented. When rupture has taken place, this is indicated by a sensation of something having given way and a sudden violent pain, the sudden cessation of the uterine contractions, restlessness and anxiety, dyspnoea, vomiting, and often syncope and other signs of collapse. Frequently the temperature is elevated, sometimes it remains normal or becomes subnormal. The pulse rate varies from 120 to 130. The child usually dies and certain parts of it can be felt at various places immediately beneath the abdominal wall. On vaginal examination, the previously immovable presenting part is found to be very movable, later it can no longer be felt. During examination there is more or less hemorrhage. In the majority of cases the margins of the tear can be felt.

If a rupture is found labor must be terminated as speedily as possible, by measures least calculated to jeopardize the mother's life. If the child or a portion of it is present in the uterine cavity the delivery may be accomplished per vias naturalis, otherwise by laparotomy.

The rupture itself is either not at all treated (antiseptic irrigation), or it is drained by means of iodoform gauze or wicking, or laparotomy is performed. Four of the author's cases were left untreated—in two on account of the great collapse, and in the others because the rupture could not be detected during life; all these cases terminated fatally. In eight other cases tamponade with iodoform gauze was employed in six, and with iodoform wicking in two; of these, two of the former recovered, but it is questionable whether the rupture was complete. In the remaining two cases, where the child had escaped into the abdominal cavity, Porro's operation was performed, but both ended fatally.

The author presents the following statistical information: 1. Complete ruptures without treatment, 60 cases giving 20.2 per cent. recoveries. 2. Complete ruptures treated with drainage or tampons, 70 cases with 36 per cent. of recoveries. 3. Complete ruptures treated by laparotomy, 193 cases with 44.7 per cent. of recoveries.

After enumerating the advantages of laparotomy in this class of cases, Schultz recommends that in every case where it is possible to make a positive diagnosis of complete rupture of the uterus, the abdomen should be opened. If the tear is much contused and not suitable for suture, or if myomata are present, or the endometrium is already infected, hysterectomy is to be performed; otherwise the abdominal cavity is to be emptied and the tear sewed up. Subperitoneal pockets remaining in the parametrium or vaginal vault should be drained.

Incomplete ruptures should be tamponed with iodoform gauze or wicking, or drained by means of a glass tube. A flannel bandage is firmly applied to the abdomen, the treatment in other respects is like that after a laparotomy. If the conditions for laparotomy are unfavorable in cases of complete tear, the child should be extracted per vaginam and a tampon inserted.—*Ovrosi Hetilap, Internat. Klin. Rundschau*, Jan. 10, 1892.

OVARIOTOMY DURING PREGNANCY.

BY CHRISTIAN FENGER, M.D.

THE author reports a successful case of ovariotomy in the fourth month of pregnancy. The woman, thirty years of age, suffered from an ovarian dermoid cyst of the size of a child's head, which almost filled and was incarcerated in the small pelvis. As it was feared that the tumor might be a dangerous complication of delivery or might rupture later on in the course of pregnancy, laparotomy was performed, and the growth removed. The patient made a rapid recovery after the operation, being able to sit up at the end of the third week. The subsequent course of the pregnancy was entirely normal. Labor occurred at full term, and she was delivered of a healthy child by forceps, and although convalescence after delivery was somewhat slow, she fully regained her strength.

The author makes the following practical remarks on the subject of ovariotomy during pregnancy :

Ovarian tumors, which are at all times a source of danger, are still more so when complicating pregnancy, as the two conditions when in combination mutually influence each other, to the detriment of both mother and child. The ovarian tumor is subject to acceleration of growth, to more rapid development, during pregnancy. The gravid uterus is liable to cause torsion of the pedicle by changing the form and position of the latter, or by circulatory disturbances in the pedicle, resulting in gangrene or perforation of the cyst. When situated in the pelvis minor, an ovarian tumor is especially liable to become an obstacle to the delivery of the child, and to cause difficult and consequently dangerous labor which may result fatally to both mother and child.

In discussing the measures for the prevention of these dangers, we will first consider the fate of the mother and child when the pregnancy is left to run its course. The dangers to the mother, as gathered from the statistics, are the following : Litzmann has collected fifty-four cases, with twenty-four maternal deaths; Jetter, two hundred and fifteen deliveries in one hundred and sixty-five mothers, with sixty-

four deaths: Playfair, fifty-seven deliveries, with twenty-three deaths; Braxton Hicks, six deliveries, with no deaths; Rogers, five deliveries, with no deaths; Spencer Wells, eleven deliveries, with one death; Fritsch, four deliveries, with one death. In all three hundred and fifty-five deliveries are reported, with one hundred and thirteen maternal deaths, or a maternal mortality of about thirty-two per cent.

The mortality to the children from either abortion or premature labor, according to Engström, is much greater. In a series of two hundred and sixteen cases a mortality is reported of forty-eight per cent.

The proliferating cystoma is the form of cyst most commonly observed. They are frequently located outside of the small pelvis, and are often overlooked during pregnancy. They rapidly increase in size, and may cause over-distension of the abdomen and severe pressure symptoms from the organs of the abdomen and thorax, necessitating speedy relief. In such cases the treatment by puncture comes in question. As these cysts are located outside of the small pelvis, they are not liable to prove a serious impediment to delivery. Thus it would seem that small dermoid cysts located in the pelvis minor constitute the gravest complication of ovarian tumors with pregnancy.

Dermoid cysts are common. Jetter found thirty-seven dermoid cysts in one hundred and sixty-five cases. They are often small and thus remain in the pelvis; are easily diagnosed by vaginal examination, and, therefore, as Olshausen states, are seldom overlooked. These are the tumors which most frequently prove a serious difficulty at the time of delivery, when immovably incarcerated in the pelvis minor.

Puncture of the dermoid cyst is dangerous, as its contents are more poisonous than that of most of the other ovarian tumors; but puncture becomes unavoidable at the time of delivery when the cyst cannot be pushed out of the way up into the abdominal cavity. The usual location of dermoid cysts in the pelvis minor makes liable the occurrence of spontaneous rupture during delivery, with consequent septic peritonitis resulting partially from infection from the contents of the cyst and partially from mixed infection through the puerperal wounds.

Treatment.—While, outside of pregnancy, prompt extirpation of an ovarian tumor is always indicated, widely different measures have been advocated for the treatment of ovarian tumors when complicated with pregnancy.

1. Induction of abortion and premature labor has been recommended by Barnes, but in most cases this sacrifices the child and is not without danger to the

mother. In five cases cited by Olshausen two mothers died. As ovariotomy necessarily must follow, this method of treatment exposes the mother to the dangers of two serious operations.

2. Puncture of the cyst to relieve the symptoms and so permit natural labor to be undisturbed. This procedure, like the preceding one, is of course, only temporary and resorted to with a view of awaiting the earliest opportunity for ovariotomy. Puncture of the ovarian tumor may relieve the dyspnoea and prevent abortion. It is not more dangerous in pregnancy than under ordinary circumstances, but the puncture of ovarian tumors in general is attended by a mortality of nineteen per cent. Cohn states that one out of every six ovarian cysts is malignant; therefore, puncture might cause rapid diffusion of the malignant tumor in the peritoneal cavity—malignant peritonitis. The more rapid growth of ovarian tumors during pregnancy is apt to cause refilling of the cyst after puncture, and thus necessitate repeated punctures, which, of course, will increase the danger to the mother. Cohnstein states that of six mothers in whom puncture had to be repeated three or more times during pregnancy, five, or eighty-three per cent. died within a short time after delivery from exhaustion. Puncture does not predispose to the interruption of pregnancy in more than eighteen per cent. of the cases.

The difficulty in differential diagnosis between an ovarian tumor and the gravid uterus is apt to lead to puncture of the latter. Olshausen states that in seven cases the uterus was mistaken for an ovarian tumor and punctured. The operator then made a Cæsarean section, sutured the uterus, and closed up the abdomen. This was done in five cases with success; in two cases the puncture terminated fatally.

3. During the last few years a third method of treatment of ovarian tumors during pregnancy has come into the field, namely, ovariotomy during pregnancy. This operation is comparatively new, as in 1877, according to Olshausen, only fourteen cases were on record. In the next year over forty cases were on record, and now this method of treatment bids fair to become a regularly established procedure. Although ovariotomy in the pregnant woman was at first performed with a good deal of apprehension, it has been seen from the very beginning that the dangers were highly overrated, and that the mortality for mother and child has been decreased by this operation far beyond our expectations. In 1886 Olshausen collected eighty-two cases with only eight deaths, but he points out that individual operators had a much lower mortality, as out of thirty-six cases operated upon by Lawson Tait, Spencer Wells, and Schroeder, only one mother died.

Engström, in 1890, reported a series of forty-eight cases with only two maternal deaths, or a mortality of four and two-tenths per cent., as follows: Schroeder, twelve cases, no deaths; Lawson Tait, eleven cases, one death; Spencer Wells, ten cases, one death; Olshausen, eight cases, no deaths; and Engström, seven cases with no deaths.

I consider the mortality of the operation to-day to be below five per cent.; therefore ovariotomy during pregnancy is not any more dangerous than this operation in the non-pregnant condition.

The fate of the child is influenced by this operation to a like favorable degree. According to Olshausen, abortion follows ovariotomy in only twenty per cent. of the cases; hence eighty per cent. of the children were born at full term. When we compare this with the mortality to the children of forty-eight per cent. with non-interference, we see that by ovariotomy twenty-eight per cent. of the children are saved.

It is generally thought, and probably it is true, that the earlier in pregnancy an ovariotomy is performed the more favorable is the result. Wilson states that ovariotomy becomes less favorable after the fifth month, because, as Schroeder has pointed out, the operation becomes more difficult by shortening of the pedicle on account of the unfolding and filling in of the broad ligament to which the tumor belongs by the gravid uterus. Late in pregnancy the size of the uterus naturally makes the operation difficult by decreasing the available operating space in the abdominal cavity. This sometimes necessitates the inconvenient lateral operation to gain access to the ovarian tumor. The vascularity of the tumor and pedicle late in pregnancy always increases the difficulty of the operation. But in such cases the facts have proven a surprise to our expectations. Olshausen reports twenty-one cases operated upon after the fourth month, with only two deaths. Pipingskold reports an operation made after the commencement of labor which resulted successfully. Stratz reports fourteen operations performed by Schroeder, with no maternal deaths and with twelve living children, and formulates the answer to the question whether ovariotomy should always be performed during pregnancy, that it should be done as soon as the diagnosis is made, because:

1. Ovariotomy is inevitable, and its prognosis is not aggravated by the presence of pregnancy.
2. Delivery in childbed without the tumor has a much better prognosis than when the tumor exists.
3. One out of six tumors is malignant, contra-indicating puncture.
4. Prognosis for children is much better.

He formulates the following conclusion: "The complication of ovarian tumor with pregnancy indicates ovariotomy."

In the discussion which followed the reading of this paper, Weit and Lohlein protested against laying down absolute rules, and suggested that it might be well to individualize. Schroeder, however, supported Stratz's recommendation always to operate.

Final Remarks.—Small tumors in the pelvis are especially dangerous to the child and mother, as has been well illustrated in a case published by Lomer, in which in a II. para 21 years of age, who had an ovarian tumor in the small pelvis the size of a child's head, after rupture of the bag of waters, extraction by the foot was tried in vain. Prolapse of the umbilical cord and death of the child resulted, followed next day by version in narcosis, during which the child's head was torn off, and the patient died from collapse in three hours.

In another case, published by Nolting, a small ovarian tumor in the pelvis made delivery difficult in the following way: Forceps were first applied in vain; puncture of the tumor evacuated only a small amount of blood. The child died, and was only extracted after perforation, and still with difficulty, as the tumor came down so far in Douglas' fossa that prolapse of the rectum took place. The patient died after four days of peritonitis. The autopsy showed a double twist of the pedicle, with rupture of the cyst.

Instances of this kind, on the one hand, and the low mortality of ovariotomy during pregnancy on the other, would tend to lead to the conclusion that in small ovarian tumors located in the small pelvis and diagnosed during pregnancy, immediate ovariotomy is the safest procedure.—*Maryland Med. Journal.*

FRACTURES OF THE BONES OF THE HAND AND THEIR TREATMENT.

By Dr. A. SCHREIBER.

Fractures of the Carpal Bones are easily overlooked owing to the considerable swelling which rapidly follows the injury, and may then give rise to permanent enlargement of the joints and ankylosis. It is rarely that distinct crepitation can be obtained by manipulations and lateral movements of the wrist joint. If after a violent contusion of the wrist the carpal bones are found to be fractured and feel like marbles in a bag, the hand cannot usually be saved, although I have had good results in a case of this kind. The existence of a fissured fracture of a

carpal bone is frequently revealed by the painfulness, swelling and subsequent ecchymosis. It is probable that fractures of the carpal bones are much more frequent than is usually thought, and if complicated by partial luxations, may cause great difficulties in the diagnosis. They occur most frequently as the result of falls upon the hand, the impact of heavy bodies, etc., and the compound form with laceration of the soft parts is more common than the subcutaneous one.

The treatment consists in the application of a splint and of a cotton compress over those places where a tendency to dislocation exists. Massage should be resorted to at an early period, beginning with slight passive movements and increasing their force gradually. It is necessary to employ active and passive movements of the fingers as early as possible in order to prevent subsequent stiffness or ankylosis. Prolonged application of a long straight splint is not infrequently attended with bad consequences, and if such a dressing be used sufficient room must be allowed for the fingers to have free play.

Fractures of the Metacarpal Bones are also not as rare as the literature would seem to show. The first and fifth metacarpal bones are frequently fractured as the result of direct violence, but even the middle metacarpi, notwithstanding their sheltered position, are not exempt. I have frequently observed fractures of the third or fourth metacarpus result from blows in boxing, horse kicks, machinery injuries etc. It is always good policy after the subsidence of the swelling to examine the bones carefully so that fractures may not be overlooked. In subcutaneous fractures of the metacarpi the diagnosis is comparatively easy. There is a dislocation characterized by a prominence on the dorsum of the hand, the injured members are more or less shortened, and when the hand is closed there is a flattening of the corresponding knuckles; together with these signs we have tenderness on pressure, crepitation on passive motion, and inability to use the hand. The treatment consists in the application of metal splints conforming exactly to the contour of the parts.

Bennet has called attention to a typical form of oblique fracture of the base of the first metacarpus on its palmar side which can readily be confounded with luxation of the first metacarpus upon the dorsum of the carpus. I have frequently observed this variety which occurs mainly on the right hand. There is no appreciable shortening, since the line of fracture does not reach to the dorsum of the metacarpus. Crepitation can readily be detected in recent cases by pressure upon the base of the bone with the fingers placed on its dorsal and palmar

aspects, extension being simultaneously made sufficient to reduce the fracture. For treatment, an accurately fitting compress should be applied over the end of the dislocated bone, which is retained in place by a long straight splint extending from the lower extremity of the radius to the end of the thumb. All fractures near the articular ends of the metacarpal bones have the disadvantage of interfering for a considerable time with the movements of the fingers owing to the extensive callus formation.

Fractures of the Phalanges are of greater importance than those of the other bones of the hand. According to my observations the basal phalanges are most frequently fractured. The diagnosis is the more difficult the nearer the fracture is situated to a joint, inasmuch as crepitus is not always distinct. The displacement of the fragments takes place in such manner that they form an angle with the apex turned toward the palm; the corresponding interphalangeal joint becomes prominent on the dorsum, while the angular deformity on the palmar surface is less distinctly to be felt. These fractures are frequently overlooked and the functional results, even when they are properly treated, are poor in many instances. In the majority of cases the application of a straight splint with the finger in an extended position is incorrect treatment. If splints are employed the finger should be fixed in a position of moderate flexion; but it may be preferable to apply a plaster-of-Paris bandage, with the finger held in such manner as is most likely to secure retention of the fragments in a normal position. In cases where marked displacement exists extension according to the method of Bardenheuer may be employed. [The author makes use of the following apparatus for this purpose: To a metal palmar splint he attaches an iron rod terminating above in a roller like extremity. To make traction on the fragments, an india rubber band fastened to the finger by strips of adhesive plaster is drawn over the upper end of the rod and attached to a button at its lower end. The direction of extension may be varied according to the position of the rod, and its force according to the degree of tension of the rubber band.]

Fractures of the phalangeal extremities are apt to be followed by an oblique displacement of the peripheral end of the finger, especially if one of the lateral fingers is involved. These displacements may be also caused by rupture of one of the lateral ligaments. Fractures of the phalanges may be attended with more or less callus formation, interfering with the functions of the joint to a greater or less extent.

Special consideration is demanded by fractures of the terminal phalanges, especially those arising from

the tearing off of the extensor tendon from the bone. This slight affection which, if neglected, may have a very disturbing effect on the function of the part, is not very infrequent. It has been demonstrated by Delbet's experiments on the cadaver that in consequence of forced flexion of the terminal phalanx, when the interphalangeal joint is in a position of extension, various conditions may result; the insertion of the tendon together with a fragment of the distal phalanx may be torn off, or the tendon may be ruptured without injury to the bone. A differential diagnosis between these varieties is, however, not usually possible. The injury is frequently attended with considerable pain and swelling. The terminal phalanx is found in a position of slight permanent flexion, with inability to extend it actively; this can, however, easily be done passively, but as soon as one lets go, the flexed position is assumed again. Frequently it is possible to recognize a more or less marked ecchymosis on the dorsal aspect of the phalanx; or a swelling formed by the retracted tendon and the detached piece of bone may be felt.

It is of utmost importance in these cases to fix the finger in a position of forced extension, and to avoid flexion. This may be attained by various forms of splints, but where there is a tendency to marked displacement, it is best to cut down on the tendon under cocaine anaesthesia, suture it, apply an antiseptic dressing and an extension apparatus. I have thus far had occasion to perform primary tendon suture only in complicated cases of this kind, but never in those of subcutaneous injury. The results have been excellent.—*Münchener Medicinische Wochenschrift*, December 8, 1891.

RESECTION OF THE URETHRA.

BY PROFESSOR GUYON, PARIS.

PROFESSOR GUYON recently performed at the Hospital Necker, Paris, a resection of the urethra on a patient who suffered from a large and callous stricture. Before operating he made the following remarks:

In cases like this, the cause of the stricture is usually a traumatism. Ten years ago, this man fell from a height of thirty metres. There was no fracture of the pelvis, but the perineum was probably injured. Immediately after the accident, a severe hemorrhage occurred; an abundant flow of blood took place from the meatus, lasting for a number of hours. During all that time, micturition was impossible, until finally the patient after much straining expelled a large clot of blood, when urination

was re-established. During the following days the urethral hemorrhage progressively decreased, and micturition though painful and difficult, took place regularly. No ecchymosis nor tumefaction could be observed on the perineum.

It is justifiable to assert that there had been a rupture of the urethra in the furthest portion of the anterior segment near the *cul-de-sac* of the bulb ; for if the posterior urethra had been ruptured, the escape of blood would have been prevented by the cut-off muscle, and it would have entered the bladder and then been expelled with the urine during micturition, instead of the occurrence of continuous bleeding. Besides as deep seated ruptures are regularly connected with fractures of the pelvis, it is possible to eliminate such a lesion in the present case.

Recovery took place, gradually but one month after the accident, micturition became again difficult. A catheter was then introduced, and revealed the presence of a stricture in the perineo-bulbar region, and for six months dilatation was practised regularly at short intervals, but with poor results. In short, during these ten years, the history of the patient was most uneventful ; he succeeded in passing a catheter two or three times a week with increasing difficulty, and finally was obliged to consult surgical aid. Examination revealed localized lesions in the perineum. There was no cutaneous cicatrix, the integuments not having been affected. By palpation it was possible to detect along the canal a hard mass, of the size of a hazelnut, not painful and almost immovable. A gum catheter with an olive shaped extremity showed that the anterior urethra was normal as far back as this thick resisting mass. A very fine bougie however could be passed through the stricture. Prompt surgical intervention seemed indicated, as further delay might impair the condition of the bladder and ureters.

Several methods of operating were discussed. In this case, as the stricture was permeable, internal urethrotomy was practicable, but in traumatic stricture, this operation ordinarily gives but temporary results. It acts only upon the superior wall of the urethra, and, as in this case the inferior wall was probably the only one affected, the mass of cicatricial tissue opposite the incision would soon close the new channel. An incision of the inferior wall of the urethra by means of external urethrotomy would lay bare the cicatricial tissue through its whole thickness, and it seems that this operation would thus be more radical than internal incision. Yet it is not so, as the incision of the fibrous and indurated tissues would give rise to another fibrous and retractile cicatrix, with a result still inferior to that produced by internal urethrotomy.

The principal fact to be considered is that the lesion in this case is localized. It may therefore be possible to remove this portion of the urethra by means of a resection.

The idea is not new, and the operation has been performed many times, however with a large proportion of deaths. These were due to pyæmia, a complication which we fear no longer in these days of antiseptics.

Recently M. Horteloup presented to the Academy of Medicine of Paris a patient who suffered formerly from a traumatic stricture, which he cured by removing a cicatricial ring. Recovery was rapid, and three years later, the canal was still widely permeable.

We may divide the operative procedures into three classes. The first one includes all cases in which no immediate union of the tissues has been attempted after resection. A portion of the urethra is excised the wound filled up with gauze, and cicatrization obtained by granulation.

In a second group the soft parts between the urethra and the skin have been united, the two extremities being left to cicatrize by granulations ; of course there is then no mucous membrane in the resected part of the urethra.

Lately, several surgeons have attempted to unite the two edges of the defect and suture them from end to end. The operation is a delicate one, as it is difficult to obtain accurate coaptation. The walls of the urethra are very thin and offer but slight resistance, and the suture often fails to hold.

Prof. Guyon prefers the operation which simply brings together the soft parts, allowing the urethra and the skin to heal by granulation. In order to obtain uniform cicatrization, he employs an autoplastic procedure, bringing the parts together by means of a series of sutures at different depths. Union takes place by first intention, and it is possible in this way to restore the canal to its normal condition of elasticity. To avoid the possibility of urine penetrating the perineum, or at least preventing union, a catheter should be left for two or three days in the urethra.—*Gazette Médical de Paris*.

SIGMOIDOSTOMY SIMPLIFIED.

MR. H. A. REEVES, F.R.C.S., ED., has recently employed sigmoidostomy on three female patients for cancer of the rectum. He employed the following method which he regards as unusual, if not absolutely novel : An incision is made above and internal to the anterior superior iliac spine, extending downward and inward for about two and one-half inches, through skin, muscles and peritoneum. The

peritoneal opening should be first large enough to allow a loop of sigmoid to rest in it without constriction. The sigmoid is pulled out, and when the descending colon is taut, or nearly so, a pressure forceps is pushed through the mesentery about a quarter of an inch from its attachment to the bowel, and a straight piece of elastic catheter, No. 10 or 12, with the stylet inside, previously cut four inches long and thoroughly cleaned, or a polished vulcanite rod, is caught in the forceps and drawn through. This is supported on the outside of the abdominal wall at each end, by a small pad of lint; a piece of green protective smeared with carbolic oil, 1 in 60, should be applied over the intestinal loop and the skin and muscle incision partially closed. A thick roll of gauze is packed around the bowel, and a layer of cotton wool placed over the protective so as to prevent undue pressure when the binder is employed. It is well to give a quarter or one-third grain of morphine immediately after the operation to check anaesthetic vomiting, or to let a nurse sit by the patient and gently press over the site of operation during vomiting, but if care is taken that the peritoneal opening is of the proper size, there is no fear of the small intestine being protruded and nipped by the side of the sigmoid.

At the end of the third or fourth day usually the bowel is opened longitudinally, but the rod is left in place for two or three days longer, as it seems to form a better spur the longer it is left. In the author's first case the cut edges of the gut were stitched to the skin, but this was not done in later operations. In two of the cases the enlarged vessels of the bowel wall had to be tied when the gut was opened. After withdrawal of the rod the bowel is gradually drawn back by the mesentery and by its own weight, as far as it is permitted by the adhesions formed between its mesentery and serous coat and the parietal peritoneum, or rather the muscles and skin, for the parietal peritoneum retracts, and is not in contact with it to any large extent. The simplicity of the procedure is such that the dexterous surgeon may execute it in five minutes, and the author regards it as preferable to all other operations in cases of malignant diseases of the bowel not amenable to more radical measures, such as resection.—*Brit. Medic. Journal*, Jan. 9, 1892.

MODIFICATION OF THE OPERATION OF INGUINAL COLOTOMY AND ENTEROSTOMY.

By A. W. MAYO, F.R.C.S.

Professor of Surgery in the Yorkshire College of the Victoria University.

WHILST performing enterostomy, about five years ago, in a case of acute intestinal obstruction, it occurred to the author that if he punctured the bowel already stitched to the side with a large trocar and cannula, and then fixed a tube on the cannula, he should be able to run off the liquid faeces into an antiseptic solution placed by the side of the patient, and so prevent fouling of the peritoneum or wound.

After twice successfully employing this method, he adopted a slight modification by fixing the tube on the cannula first, and then pushing the trocar through it. He found that the slit in the elastic tubing immediately closed when the trocar was withdrawn, and prevented anything passing through. A further experience led him to devise an instrument which he has employed both in enterostomy of the small intestine and in inguinal colotomy when it was necessary to immediately open the bowel. It consists of a large cannula oval on transverse section, with two openings at the side, one to allow the passage of faeces if the end of the cannula happens to reach the other side of the bowel; the other higher and projecting from the side in order to allow a tube to be fixed on it to convey the faeces away from the bowel. The end of the cannula within the bowel is rounded off so as to avoid a sharp end. The distal end has a short india rubber tube fixed in it, which embraces the trocar, and which is securely closed with a ligature, which is tightened as the trocar is withdrawn. The trocar has a lancet shaped end, which incises the bowel, and does not make a jagged wound, thus rendering it easy to close the aperture if the time comes that such an operation is required.

After insertion of the instrument in the bowel, an ordinary antiseptic dressing is applied to the wound, and the cannula is held in position by strapping applied over the dressing. In two or three days it may be removed, as reunion between the parietal and visceral peritoneum will then be sufficiently firm to prevent fouling of the peritoneal cavity, but if it be thought desirable it can be retained *in situ* for several days longer, although after the third day a little moisture will escape by the side of the cannula.—*Brit. Med. Journal*, Jan. 9, 1892.

DR. J. E. SUMMERS, (*Medic. News*) reports a successful case of removal of the veriform appendix from a child twenty-two months old, for suppurative appendicitis. The appendix was much enlarged, in part gangrenous, and perforated at three points.

Surgical Memoranda.

Treatment of Bubo.—Dr. J. Adolphus says that a coming bubo may be aborted by injecting three or four drops of pure carbolic acid, diluted with twice as much glycerin and half as much water, into the centre of the tumor. Plunge the cannula deep into the centre of the swelling, and inject slowly. If the tumor is large and the area of outlying œdema considerable, the injection should be made in three places. After injection, give the tumor a coating of flexible collodion; the collodion contracts and causes pressure on the tumor, which helps to promote absorption. Nine out of ten cases of bubo will be found to belong to the chancroidal class. Often the specific bubo remains unbroken for months, and then bursts. It is always a hard, solid body, well defined in outline, a point in differentiation from the simple kinds. The latter are amenable to the carbolic acid treatment, but the specific bubo is sullen and defiant, slow, remains hard, seldom softens. The simple kind often makes ugly sores which are hard to heal. He has found iodoform, boric acid, and balsam Peru the best local treatment, equal parts of each being used and the cavity being filled with the mixture. When the healing is slow he treats the sore with a solution of nitrate of silver, 60 grains to the fluid-ounce of water, a few drops of pure nitric acid, and 10 to 20 grains of nitrate of soda being added. Apply with a swab. This will frequently stimulate rapid granulations and cicatrization. A good local application to these sores is the fluid extract of hydrastis, two or three times a day.—*Medic. Age.*

Removal of Necrotic and Carious Bone with Hydrochloric Acid.—Dr. Robert T. Morris, of New York, in a paper read before the Virginia State Medical Society, stated that deforming and dangerous operations could be avoided by adopting a method which he thought was now complete. An opening is to be made directly down to the dead bone, and a large sinus formed. All other related sinuses are then made to lead into the large single one if possible. At the end of about a week, when granulation of the walls of the sinus has begun, the cavity is injected with a three per cent. solution of hydrochloric acid in distilled water. The frequency of making injections varies with the nature of the case. If the patient is confined to bed, injections can be made every two or three hours. If the patient is going about, injections are made only at night, and the patient is directed to assume a position in bed that will retain the acid solution. This acid injection decalcifies dead bones rapidly, but as only

superficial layers are attacked, other experiments have failed because they could not get rid of decalcified bone readily, and the acid solution did not penetrate to deep portions through it. Dr. Morris' plan consists in injecting into the sinus, at intervals of about two days, an acidulated pepsin solution, and this will digest out the decalcified bone in two or three hours. The whole process is then repeated until the sinus closes from the bottom, which it will do when the last dead bone is out.—*Virginia Medical Monthly.*

Operation for Hypospadias.—Prof. Landerer (*Deut. Zeitschr. f. Chirurg.*, 32, 5) employs the following operation in this condition, which is based upon Rosenberger's method for epispadias: On each side of the defect of the penis a strip of tissue, 3 to 4 mm. in breadth, is freshened, and the same is done at the corresponding portion of the scrotum. The bleeding surfaces are then coapted and united by sutures, so that the penis is firmly fixed to the scrotum. After six to eight days the sutures are removed and several weeks after the operation the penis is loosened from its attachment to the scrotum in the following manner: The penis is drawn up by traction on the glans, and two incisions 3 to 4 mm. in breadth, are then made from the meatus obliquely toward the scrotum. The rhomboideal defect on the scrotum remaining after detachment of the penis is then closed by suture. The result of the operation is excellent.—*Centralbl. f. d. gesammte Therapie*, January, 1892.

Partial Resection of the Kidney.—Prof. Bardenheuer has performed transverse resection of the kidney, together with excision of the corresponding portion of the renal pelvis, in two cases, in one for a cyst and in the other for a calculus. In the former case, that of a woman of thirty, the wound in the kidney pelvis was closed by a few sutures, but on the third day septic symptoms occurred in consequence of decomposition of retained urine around the kidney, and it was found necessary to extirpate the entire organ, which was followed by recovery. In the second case, that of a woman aged forty-six, the wound left after resection was tamponed with sterilized gauze. At the former site of the calculus in the kidney, however, a fistulous communication with the colon was formed, which still persisted eight weeks after operation. In Bardenheuer's opinion, the second case proves the practicability of transverse resection of the kidney, especially since in both instances the hemorrhage from the cut surfaces was quite easily controlled by transfixion and ligation of the vessels.—*Arch. f. Klin. Chirurg.*, Bd. xlvi, p. 372.

Injections of Iodoform Oil in Tuberculosis of the Joints.—Dr. Adolph Ahrens has employed injections of a 20 per cent. emulsion of iodoform in olive oil, in sixty cases of tuberculosis of the joints, bones and soft parts, during the past two and a half years. The results of his experience are comprised in the following conclusions:

1. Iodoform-oil injections are entirely free from danger.

2. In most of the cases thus treated a decided improvement of the condition is noticed, which is evinced chiefly by the subsidence or diminution of the pains and the increased functional power.

3. In about forty per cent. of the cases observed, the improvement obtained approximated closely to a cure. Tubercular affections of the wrist and elbow joints are most favorably influenced by this treatment.

4. In commencing tuberculosis the prospects of a cure are most favorable, and the coexistence of phthisis does not render the prognosis worse.

5. To prevent recurrences, a continuation of the injections at long intervals is indicated, even after a cure has been apparently effected.—*Beitr. z. Klin. Chirurg.*

Detachment of the Internal Epicondyle of the Humerus.—Mr. J. Hutchinson, F.R.C.S., in an exhaustive article on this subject (*Brit. Med. Jour.* Jan. 16, 1892), summarizes as follows:

1. Detachment of the internal epicondyle of the humerus (as an epiphysis) is a very frequent injury in early life, and often accompanies dislocation of the elbow joint.

2. The detached fragment is displaced downward, and is rarely, if ever, reunited by bone.

3. In the treatment, passive motion should be commenced within three weeks, and should be persevered with until the joint regains its functions.

4. In several cases, owing to pressure on the ulnar nerve, great limitation of movement, and trophic changes in the region supplied by that nerve, have resulted. In such cases it may ultimately be advisable to excise the detached piece of bone, but excision of the joint, which has been performed in one or two cases, is quite unjustifiable.

Convulsions Treated by Compression of the Carotid.—Dr. Leopold Roheim of Budapest, publishes a case of eclampsia, which he had, after the failure of all ordinary remedies, treated successfully by compression of the carotid. The case was that of a robust man of fifty-six, who had been suffering for years from cancer of the bladder, with occasional haematuria. The man had been attacked

by a most violent eclamptic paroxysm, which was mainly confined to the left side. After constant compression for some time of the right carotid the convulsions were suddenly arrested, the patient recovered normal respiration, and very soon felt quite well. Two or three slighter attacks followed, which were soon arrested by properly instructed attendants. The effect of the compression was so remarkable that Dr. Roheim earnestly recommends this treatment. He compressed the carotid with the index and second finger between the larynx and sterno-cleido-mastoid muscle backward toward the spine. He considers the *rationale* of the treatment to be that by compressing the carotid and at the same time necessarily the sympathetic nerve fibres, which closely follow the course of the artery, the excitability of the brain is allayed.—*Lancet*, Jan. 2, 1892.

Fracture in the Upper Third of the Femur.—Dr. Oscar H. Allis (*Medic. News*) states that after fracture of the shaft of the femur the fragments are bound together by a hinge, which will be short if the vulnerating force be only sufficient to break the bone. If the hinge is short, overlapping can only occur to a very limited degree, and in all such cases the "shortening" will be due to angular displacement. When the hinge is loose, overlapping, with or without angular deformity, is possible. The shorter the hinge the greater will be the control of the upper fragment, through the agency of the lower. Traction on the lower fragment under all circumstances is incapable of restoring the long axis of the broken bone. If the hinge is short, traction will draw down the upper fragment, but cannot efface the anterior angular tendency. If the hinge is long traction will exert but little influence upon the upper fragment. Traction in the oblique direction has no advantage over horizontal extension. The so-called "weakness" after fracture of the femur is not due to deficient bone-repair, and is greatest when due to angular deformity with rotation of fragments. Angular deformity, with rotation of fragments, compels both hip and knee to assume abnormal relations to the trunk. Shortening, due to overlapping, *without* angular deformity or rotation of fragments, is no barrier to heavy manual labor. Treatment directed to the lower fragment is the probable agency in causing rotation in the lower fragment. No surface-treatment can insure a useful limb.

Osteotomy has corrected many a faulty union after months of waste time. The conversion of a sealed (simple) fracture into an exposed (compound) one offers the only possible means for accurate diagnosis, and the only possible method of rational treatment.

Antiseptic Memoranda.

Peroxide of Hydrogen in Diseases of the Mucous and Serous Membranes.—Dr. W. S. Mullins, of Henderson, Ky., has had an extensive experience with Marchand's peroxide of hydrogen, during the last ten years, in diseases of the nose, throat, ear, skin, and uterus. He cautions us against using the commercial and poisonous peroxide of hydrogen, and advises that it be applied or inhaled only by means of glass, rubber, porcelain or gold instruments, as otherwise its effects are contaminated. In acute, subacute or chronic coryza, when accompanied by an acrid and excoriating discharge, and much sneezing, it will almost certainly control the sneezing and change the character of the discharge from acrid to bland. In chronic nasal discharge, either from the anterior or posterior nares, of a yellowish greenish fetid character, with an accumulation of hardened pus and scabs in the nose, it will soften them and cleanse the nose effectually. In both of these conditions of nasal catarrh it should be followed by an application of glycozone on a cotton swab, or better still, a small tampon of borated cotton should be saturated with glycozone and placed up each nostril and allowed to remain for one to two hours. In diphtheria, the mouth, nose, pharynx and larynx should be frequently sprayed with peroxide of hydrogen, 15 volumes, $\frac{1}{2}$ ss- $\frac{1}{2}$ ss to $\frac{1}{2}$ iii of distilled water, according to the degree of severity. In bronchitis and asthma vapor inhalations of a mixture of peroxide of hydrogen, 15 vol., $\frac{1}{2}$ ss to $\frac{1}{2}$ i glycerine have proved very useful. In phthisis inhalations of a somewhat stronger mixture have been employed with success. In conjunctivitis and acne good results were obtained. In a case of extensive ulcer of the leg, of fifteen years duration, which had resisted all other measures, peroxide of hydrogen, 15 volumes, was dropped on the ulcer morning and night, and then a dressing of borated cotton, saturated with glycozone, and oil silk was applied. The leg was then bandaged from foot to knee with an Empire bandage. A perfect cure was thus obtained. In gynaecology, nothing, in the author's opinion, serves as well and often as peroxide of hydrogen. In abscess of the labia he punctures with a bistoury, cleanses with peroxide of hydrogen, 15 volumes, and then inject slowly 10 to 15 drops of glycozone; very little reaction follows and the results are perfect. In vaginitis the pure peroxide (15 vol.) is applied with a cotton swab to the entire mucous membrane, and followed at once by an application of glycozone, and introduction of a cotton tampon saturated with the latter. In endometritis and chronic metritis the application of

the peroxide of hydrogen followed by tampons soaked in glycozone, has afforded excellent results in combination with other measures. In cases of carbuncle subcutaneous injections of the pure peroxide act more efficiently and rapidly than any other local treatment. After the pain following the injection has subsided, a few drops of glycozone should be applied in the same manner.—*Med. Era.*

Iodine Water and Aristol as Surgical Antiseptics.—Popoff speaks highly of the antiseptic effects of irrigations with iodine water (1 to 10,000), and consecutive powdering with aristol (pure or in the form of a twenty per cent. mixture with boracic acid) in cases of tuberculosis of joints (fungating arthritis, etc.) and bones, callous syphilitic ulcers, simple chronic ulcers, angina Ludovici, phlegmon, furunculosis, wounds of every description, etc. The iodine lotion also gives excellent results in inveterate ozæna. In addition to its powerful antiseptic properties it has a decided astringent and haemostatic action. Under its use luxuriant and profusely bleeding granulations rapidly assume a normal appearance, cease to bleed, etc.—*Boston Med. and Surg. Journ.*

Europhen.—Nolda (*Therap. Monatsh.*, October, 1891) relates some therapeutical observations on europhen. In four out of six cases soft sores healed in from seven to nine days, the remaining ones in twelve and fourteen days respectively. The parts affected were washed with perchloride of mercury solution (1 in 2,000) and the pure powder dusted on. In one case of a very extensive sore the author says that the half treated with europhen healed two days sooner than the other half treated with iodoform. Three cases of suppurative otitis, two of ulcer of the leg and one of hard chancre did well with this drug. Europhen is indicated in all cases where iodoform was formerly employed. Its healing qualities excel those of iodoform in cases of spreading ulcers, etc., and it has the following advantages : 1, its smell is less intense and not disagreeable, 2, it is innocuous, and 3, it has a lower specific gravity.—*British Medic. Journal*, Jan. 2, 1892.

The Dish-Rag Gourd as a Substitute for Sponges.—Dr. Beall (*Texas Courier of Medicine*, December 1891) regards the Luffa dish-cloth or inside of the vegetable dish-rag gourd as an excellent means of cleaning any surface upon which the knife is to be used. It is cheap, will not irritate the skin, will bear any kind of antiseptic solutions or soaps, and will rapidly remove dirt and infectious material.

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Editorial Department.

NEW YORK, MARCH, 1892.

THE TREATMENT OF INTESTINAL OCCLUSION BY THE CONSTANT ELECTRIC CURRENT.

Professor Semmola, who is justly esteemed one of the great clinicians of Italy, has recently recorded a case in the *British Medical Journal*, which is interesting for a number of reasons. In the first place it shows that there is a form of intestinal occlusion due exclusively to transient paralysis of the intestines through defective innervation, and secondly that in these cases the constant electric current exerts a marvellous effect. In the case in question the author based his diagnosis of intestinal paralysis upon the following facts: first, the sudden onset of the pain; secondly the paroxysmal character of the pain, and the freedom from suffering between the attacks, when the abdomen was soft and pressure did not cause any pain; thirdly, the mapping out of the intestinal coils at different points during every attack of pain; fourthly, the intestinal occlusion which had come on suddenly after the patient had been repeatedly purged, and on the day following an attack

of acute diarrhoea; fifthly, the existence of paralysis of the bladder, which had appeared without any apparent cause, so far as the genito-urinary apparatus was concerned, and which has never been recorded as a concomitant symptom of ordinary intestinal occlusion; and sixthly the neurotic temperament of the patient. When Semmola was called in, the attending physicians had exhausted all the measures ordinarily employed in the medical treatment of intestinal occlusion, without affording the slightest relief, and laparotomy had been advised as a last resort. As the logical sequence of his diagnosis of nervous paralysis of the bowel, the author urged the immediate application of the constant electric current—a proposition which was vigorously opposed by most of the medical men present. A current of a strength of ten milliampères was applied, the positive pole being carried twenty to twenty-five centimetres up the bowel by means of a rectal catheter, and the negative pole rubbed transversely over the surface of the abdomen, especially in the parts corresponding to the cæcum, the ascending, transverse and descending colon, and the sigmoid flexure, as well as over the hypogastric region. The duration of each application was from eight to ten minutes, and there were three sittings every day. The effects of this treatment were highly satisfactory; by the end of the first day, the urinary retention had disappeared, the attacks of pain were less violent, and the patient's general condition had improved, but the constipation still persisted. Encouraged by these results, and despite the opposition of the other doctors who clamored for laparotomy, the author continued the electrical applications and had the satisfaction of relieving the obstruction after the ninth sitting.

This case not only testifies to Dr. Semmola's ability as a diagnostician, but to his courage in acting upon his own convictions, and resisting the demands for immediate laparotomy which seemed justified in view of the critical state of the patient. It also illustrates the necessity of studying each case of intestinal obstruction carefully, with the view of determining the exact pathological condition present. Indiscriminate laparotomies performed in cases which might have been cured by simpler and less dangerous means will certainly not redound to the credit of surgery.

PREHISTORIC TREPHINING.

Although looked at from a modern standpoint the knowledge of surgery possessed by the ancients was of the most rudimentary character, it must not be forgotten that we are indebted to them for many of the operative procedures which the surgeon of the present day is called upon to perform. Necessity, as the saying goes, is the mother of invention, and it is certain that the ancient medical man, although profoundly ignorant of pathology, was frequently led by common sense reasoning—some might call it intuition to devise operations, the knowledge of which became lost in the course of time. A familiar instance of this is the operation of rhinoplasty, which was practised from a remote period in India and owed its invention to the custom of punishing criminals by cutting off their noses. Notwithstanding its ancient origin, however, rhinoplasty was not employed to any extent in Europe until the present century. An interesting chapter to the history of ancient surgery has been recently contributed by Professor Hal C. Wyman, of Detroit. In a paper published in the *American Lancet*, Dr. Wyman describes a skull which was exhumed from a mound on the banks of the Detroit River, and which, in his opinion, presents evidences of having been trephined for surgical purposes. Through the top of the cranium three holes had been bored, bearing such relations to each other that lines drawn connecting them would have formed a triangle. The apertures are remarkable for the smoothness of their sides and their almost perfect circular circumference. Dr. Wyman thinks that no stone or flint instrument could have produced them, but that the material used was obsidian, a species of very hard lava, with the properties of which the ancients were acquainted. From the same mound which furnished this interesting specimen four other skulls had been exhumed at different times, and two of these were also perforated. An investigation of this subject by the author revealed that a number of such skulls had been found in the western part of this country, but especially in Michigan, Illinois and Ohio, while numerous specimens have been discovered in nearly every country of Europe, in Asia Minor and Algeria. It is noteworthy that there still exists a race in Algeria called Kabyles, who employ trephining for cranial fracture, making use of instruments which, though of the most simple pattern, are well designed for the purpose. The question of surgical interest is whether these crania of prehistoric races were trephined before or after death. Dr. Wyman states that the per-

forated skulls found in Europe and Asia Minor bear better evidence of trephining as a surgical proceeding than those of America, many, and perhaps most of which appear to have trephined post-mortem. It is generally believed that the trephining was performed for religious rather than surgical purposes, but as the author pertinently remarks, if this were true it is strange that more perforated skulls have not been found since religious observances are practised commonly by the masses. The fact that the openings usually show no signs of cicatrization is, in the author's opinion, no valid objection against the view that they were made for surgical purposes, since the operation may have been resorted to too late to prolong life until repair could establish permanent traces. Moreover, the perforations are so small that, if the operation was successful, the openings would close entirely in a few weeks, leaving no traces which would be likely to be detected by any one but a skilled archaeologist. The author, therefore, concludes that the valley of the Great Lakes once contained a race of people who practised surgical trephining, and this view is in keeping with the teachings of Broca, the foremost authority on this subject, who says that in the stone age young children were frequently trephined for internal maladies.

THE TRANSLUENCY OF SOLID TUMORS.

DR. PONCET (*Bulletin de l'Académie de Médecine*) has recently called attention to the fact that translucency is not a characteristic of fluid tumors only, but that this property is shared by certain solid formations. Thus he has noticed translucency in four cases of lipomata of the hand, forearm and axilla, in chondromata of the bones and soft parts, in fungous synovitis, in dermoid cysts with solid contents, etc. It follows from these observations that the mere translucency of a tumor is no positive indication of its fluid character and can therefore be regarded as only of comparative diagnostic value. But even in cases where there is no doubt as to the presence of a fluid accumulation, the fact that it is translucent does not throw much light upon its nature. The contents may be more or less turbid or more or less admixed with blood, without arresting the passage of the rays of light. Dr. Poncet has observed this several times in cases of hydro-hæmatocoele and other cysts with bloody contents, and in a case of hæmatoma of the ear upon which he operated the tumor was entirely translucent. He thinks therefore that the translucency of a tumor depends chiefly upon its size and especially upon its thickness.

Original Articles.

THE TREATMENT OF COMPOUND FRACTURES.*

By HERMAN MYNTER, M.D., Buffalo, N. Y.
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IN no class of accidents is the influence of antiseptic treatment more apparent than in compound fractures. Before the antiseptic period the mortality in these accidents from septicæmia, pyæmia and erysipelas was simply frightful. No prognosis could be given in a single case, not even in a simple puncture of the skin. Billroth gave in gunshot fractures a mortality of sixty per cent. for the femur, and twenty-four per cent. for the leg below the knee. But in civil hospitals the results were even worse. Volkmann lost twenty-five of one-hundred and four cases of compound fractures from gunshot wounds at Trantenan, *i.e.*, twenty-five per cent., and twenty-six of sixty-four compound fractures of the leg in the Hospital at Halle, in peace, *i.e.*, forty per cent., and yet a great many were simple punctures of the skin.

Of 885 cases of compound fractures of the leg below the knee collected from different sources, 339 died, *i.e.* thirty-eight per cent., while the mortality in war was but twenty-four per cent. This was the general rule and not characteristic of one hospital. Baum in Göttingen had 38.0 per cent. mortality.

Billroth "	Zürich	"	38.7	"	"
Clinic "	Breslau	"	40.5	"	"
Clinic "	Halle	"	40.6	"	"
Clinic "	Bonn	"	41.8	"	"
Lücke "	Bern	"	38.0	"	"

I am informed from credible sources that at the Buffalo General Hospital, shortly before 1880, sixteen consecutive cases of compound fractures of the leg terminated fatally.

It is greatly to be wondered at that with such general results Volkmann's paper on the treatment of complicated fractures in 1877, occasioned the greatest astonishment. He reported seventy-five cases, of which eight were amputated secondarily, but all seventy-five recovered. Of these seventy-five cases forty-three had fractures of the leg below the knee, for one of which amputation was performed.

Volkmann's method was as follows: The wound was dilated with the knife in every case, so that a finger could be introduced and the fracture seen and felt. The wound was then thoroughly disinfected

with carbolic acid solution, all coagula being removed. All pockets under the skin were opened freely in order to drain them, and a number of incisions were made particularly where the skin was torn loose from the fascia, in order to remove the blood and introduce drains, so that the skin might adhere again by first intention. Badly crushed parts of muscles were occasionally removed. The fracture was disinfected, if necessary, through a new incision. All loose splinters were removed, while those attached to the periosteum were left in situ. Sharp bone-points were removed with bone scissors. After repeated irrigation a number of short drainage tubes were introduced vertically, the wounds sutured and an antiseptic bandage and lateral splints applied. The first dressing decided the fate of the patient. The entire dressing was removed in all severe cases inside twenty-four to forty-eight hours, in order that he might satisfy himself that everything was all right, and thereafter regularly every second, fourth or sixth day until no more secretion appeared, and until the blood coagula had been replaced by granulations. The drains were then removed and a permanent plaster-of-Paris bandage applied. The method, although successful, was quite laborious.

It is now fifteen years ago since Volkmann's paper appeared. It should have revolutionized the teachings of the treatment of compound fractures and, yet, has it done so? We need only consult any one of the numerous text books on surgery in the English language and we will in almost all find the following recommendations: If a mere puncture is present, seal it up with collodium, or compound tincture of benzoin. If suppuration occurs, incise and treat on general principles. If there is a large wound and lacerated edges, syringe it out with strong antiseptics, insert drainage tubes, apply antiseptic bandages and splints. If the bone is comminuted remove loose splinters, saw off projecting edges, wire the fragments and treat on general principles. In severe compound fractures with extensive lacerations of soft tissues, ruptures of large arteries and nerves, and opening of large joints, amputate.

For several years I have employed a uniform and more radical method in dealing with this class of accidents and the results have been as encouraging as the method is logical. A compound fracture is simply a contused and lacerated wound, as little inclined to heal by first intention as any other contused and lacerated wound, not to mention the fact that the wound is often, even in simple punctures, filled with dirt, the sharp ends of the bones having gone through the clothing and into the ground. I have rarely examined such a wound without finding foreign particles in it. To seal such a wound with

*Read before the New York State Medical Society at Albany, February 1882.

collodium is as unscientific as it is dangerous, even if it occasionally heals without any accident occurring.

I have, therefore, in every case of compound fracture for several years endeavored to change the contused and lacerated wound into a simple incised wound in which I confidently might expect healing by first intention. On admission to the Sisters of Charity Hospital, a patient with a compound fracture of the leg, or any other limb, is invariably anæsthetized and the leg is then as thoroughly disinfected as can be done with soap, brush, razor and corrosive sublimate. The wound, even if a simple puncture, is then freely incised, an Esmarch's bandage having been previously applied. All crushed and lacerated, or blood suffused and suspicious looking tissues are thoroughly removed with curved scissors, and this is done whether they be formed by skin, subcutaneous tissue, fascia or muscle. I prefer to take away too much rather than to leave anything suspicious behind. Every pocket is opened along its whole length and treated in the same way. If deep-seated pockets be found between the muscles, large openings are made in the most convenient spot in order to deal intelligently with them. Loose splinters are removed, and if the fracture is severe or comminuted, the ends of the bones are forced out through the wounds, thoroughly cleaned, and the blood clots removed between and behind them. Sharp points are removed with bone-scissors, and in comminuted fractures the bone-ends are occasionally sawed off transversely. I have quite often found loose splinters and even foreign particles behind the bone-ends. The Esmarch's bandage is thereafter removed, in order to find and ligate bleeding arteries, and then reapplied. The wound having been thoroughly disinfected with corrosive sublimate solution (1-2000) and the fractured bones having been brought into apposition and carefully held there by the chief assistant, the different wounds are closed with catgut sutures, with the exception of about one-half inch in each wound, which is left open for drainage. A strict antiseptic bandage is next applied, and this covered with a plaster-of-Paris bandage taking in both the knee and the foot. The Esmarch's bandage is finally removed and the wound allowed to fill with aseptic blood.

I have in no case used any silver-wire sutures or drainage tubes, both of which not only are superfluous, but necessitate the disturbance of the dressing and thereby may interfere with the healing process.

This first dressing I allow to remain undisturbed from four to six weeks, according to the severity of the fracture, and, when removed at that time, I have in every case found a perfectly healed wound without a

trace of pus. If the fracture is not then perfectly consolidated, I reapply the plaster-dressing.

I have during the last three years treated eleven cases of compound fractures of the tibia and fibula in this way, most of which were very severe. One died of delirium tremens on the sixth day, but the wound was found perfectly aseptic. In one case where amputation was performed on the third day on account of gangrene, recovery occurred, and nine cases recovered without any complications, such as necrosis, osteomyelitis, suppurations, etc., the wound in every case healing without a trace of pus.

I could, with the greatest ease, double or treble these few statistics if I were to add compound fractures of other long bones and primary resections of joints on account of injuries. The result has in every case been the same, a perfectly aseptic course with a minimum of discomfort to the patient.

Is it not then about time to rewrite the chapter on the treatment of compound fractures? I add a little statistical table of eleven cases, giving in each case the age, cause, condition on admission and result. It is valuable, particularly in showing the uniformity of results in the most diverse degrees of lesion and at different ages.

I have treated successfully in this way cases of fractures in which I formerly without hesitation should have amputated, and I have very greatly modified my ideas of what is an indication for primary amputation. Let me, as an example, mention more fully case No. 11, in which I had the opportunity of examining the wound on the sixth day, the patient then dying of delirium tremens.

P. F., aged twenty-one, was brought, on November 30, 1891, to the Sisters of Charity Hospital with the following history: Eighteen hours previously, while blasting in the Niagara tunnel, a large rock weighing several tons fell, striking him on the right leg in the lower third, and producing a compound and comminuted fracture of both tibia and fibula and extensive lacerations of the soft parts. On examination at the Hospital two large lacerated wounds were seen, one on the anterior surface, through which bone protruded, and one behind, extending well up on the calf. Both wounds were filled with numerous particles of stone, some as large as beans, and with earth. Under ether-narcosis the wounds were freely enlarged and a third incision was made over the fibula. Ten large splinters were removed leaving a gap about two inches long between the ends of the bones.

The bone ends were then made to protrude through the wounds and sawed off transversely. At the point of fracture the bellies of all the muscles except the peroneus longus, tibialis anticus and soleus

were found torn across and pulped for several inches. The crushed parts were removed with scissors, also all lacerated subcutaneous tissue and parts of the skin.

The posterior tibial artery was found ruptured and was doubly ligated. The foot was thus held in place by the skin, the three muscles mentioned, and the anterior tibial artery. The condition of the nerves was not ascertained. The wound was thoroughly irrigated, the incisions sutured with catgut in the way mentioned previously, the foot pushed upwards to approximate the bone-ends and held carefully in place while an antiseptic dressing and a plaster-of-

Paris bandage were applied. By measurement there was then found fully two inches of shortening. Moderate surgical fever followed, but the toes were warm and the patient comfortable until December 4th, when he was attacked by delirium tremens to which he succumbed on December 6th.

The dressings were found perfectly sweet, without a trace of pus, and the wounds in the skin entirely agglutinated or healed. A blood-clot was found organized around the bone-ends and between the severed muscles, and the whole condition gave every evidence that the final result would have been favorable, if he had not died of delirium.

	NAME.	AGE.	OCCUPATION.	CONDITION AND CAUSE.	RESULT.
Case 1, Entered Nov. 8th, 1888.	John Meyer,	65	Tramp,	Struck by railroad train. Lacerated wound of middle third of leg, protruding ends of bone, oblique fracture with several loose fragments. Wound full of dirt and coal dust. Soft tissues badly lacerated.	No rise of temperature. Feb. 15th, 1889, dressings changed. They were dry and there was no pus. Wound healed; some looseness of fracture; plaster dressing was reapplied. April 18th, 1889, discharged cured.
Case 2, Entered Jan. 10th, 1889,	Timothy Cronin,	28	Printer,	Slipped on icy street and sustained compound fracture of both bones of right leg at junction of middle and lower third. Fracture oblique and bones protruding on anterior surface. Soft tissues badly crushed and lacerated.	Jan. 11th, 1889, toes cold, bandage loosened. Jan. 18th, no return of circulation, commencing gangrene. Amputation below knee. Patient made a good recovery.
Case 3, Entered Oct. 9th, 1890,	E. Clifford,	24	Carpenter,	Fell 15 feet from a ladder, producing compound fracture of both bones of left leg in lower third. Upper fragment protruding three-quarter inch; wound full of dirt. Muscular tissues badly lacerated.	Temperature on 2d day 101°, 3d day normal. Discharged Dec. 5th; no deformity.
Case 4, Entered March 20th, 1890.	Pat Kelly,	24	Carpenter.	Fell from scaffold. Compound fracture near ankle joint. Several pieces of bone removed.	Discharged April 27, 1891, recovered.
Case 5, Entered Oct. 20th, 1890,	John Setticker,	45	Huckster,	Was thrown from his wagon, fracturing both legs. Simple fracture of left leg, compound fracture of right leg in middle third. Fracture oblique, punctured wound on inner aspect of leg.	No rise of temperature. Discharged April 27th, recovered.
Case 6, Entered Feb. 28th, 1891,	C. Majon,	24	Unknown,	Fell on icy sidewalk. Punctured wound on anterior surface of left leg, oblique fractures.	No rise of temperature. May 7th, wound healed, but fracture still loose. July 28th, discharged recovered.

	NAME.	AGE.	LOCATION.	CONDITION AND CAUSE.	RESULT.
Case 7, Entered Sept. 18th, 1891,	S. Eastman,	30	Brakeman,	Struck by engine. Compound transverse fracture of tibia and fibula, middle third, left leg. Bones overlapping fully an inch. Punctured wound on inner surface. A large incision was made in order to reduce the fracture, it being impossible to do so by extension alone. A great deal of crushed tissue and pulpefied muscle was cut away. Sharp edges of bone cut off.	Temperature on second day 100°, thereafter normal. Oct. 24th, wounds healed without pus, fracture still loose. Nov. 26th, still some looseness. The callus severely manipulated and plaster bandage reapplied.
Case 8, Entered Sept. 30th, 1891,	Fred. Ullmann,	9	Schoolboy,	Fell under cars. Right leg crushed to a pulp in middle third, in left leg a compound fracture between middle and lower third. Right leg amputated below knee-joint. On left leg soft parts badly bruised, punctured wound on inner surface, through which upper fragment protruded.	No rise of temperature. Discharged recovered, Nov. 18th.
Case 9, Entered Nov. 6th, 1891,	James Thomas,	40 Col'r'd	Miner,	Struck in the Niagara tunnel by a large rock on left leg on day before. Compound fracture of tibia and fibula in the middle, oblique fracture with ends of lower fragments protruding through the skin.	No rise of temperature. Dec. 20th, wound healed, but some looseness of fracture. Plaster dressing reapplied. Is still in hospital.
Case 10, Entered Nov. 10th, 1891,	Mrs. Whisking,	47	Housewife,	Thrown from a wagon 18 hours previously, and sustained a compound fracture between middle and lower third of left leg. No splint applied; when received large ragged wound over anterior and inner surface, through which lower fragment protruded for one inch. The anterior tibial muscle was caught between the bone-ends. Behind the upper bone-end, which was made to protrude, a large fragment of bone, one inch long, was removed.	No rise of temperature. Sent to her home on Dec. 26th, with a plaster apparatus, as there was still some looseness of the callus.
Case 11, Entered Nov. 30th, 1891,	Pat Flaherty,	31	Miner,	Injured at the Niagara tunnel by blasting on Nov. 29th, producing comminuted and compound fracture of tibia and fibula and diffuse laceration of skin, subcutaneous tissue, muscles and rupture of posterior tibial artery. Wound filled with dirt and particles of stone. Ten large splinters removed leaving a gap two inches long between the bones. The bellies of all the muscles except tibialis anticus, peroneus longus, soleus, pulpefied for several inches and removed. Arteria tibialis postica doubly ligated.	Died on sixth day of delirium tremens. All wounds found agglutinated or healed; a large organized blood clot was found between the bones and muscles. Not a trace of pus.

**REMARKS ON STRANGULATED HERNIA, WITH
REPORT OF A CASE OF OPERATION WITH
RECOVERY.**

BY GEORGE G. VAN SCHAICK, M. D.

Attending Surgeon to the French Hospital, Instructor in the New York Post Graduate Medical School and Hospital, etc.

STRANGULATED hernia is an occurrence of comparative frequency, of great suddenness, and one which so swiftly jeopardizes the sufferer's life, that every medical man feels the deepest interest in its nature and treatment. Hence it has been so ably and thoroughly studied that the writer cannot expect to add an iota to the knowledge we already possess in regard to it. But it has seemed to him that it might be of interest to study this condition with reference to its occurrence in the practice of the country physician and, in general, of the medical man whose surgical resources as to operative facilities, special skill, and intelligent assistance, are limited.

I shall not describe strangulated hernia, rehearse its various symptoms, or propose any new mode of treatment adapted to it. My intention is merely to discuss the mode of procedure best adapted to its relief when general surgical facilities are limited.

In the first place we are invariably told to try taxis, and are instructed that, failing to reduce the tumor without anæsthesia, we should put the patient under its influence and try again, allowing the hips to rest upon the bed, while the shoulders are supported on a stool or chair below the level of the bed. In regard to these procedures, the cardinal rule should be : " Beware of losing time," for in these cases, as in cases of hemorrhage, " Time is Life." The medical man should procure an anæsthetic at once, and as soon as one is at hand, he should administer it to the surgical degree. The hernia may be one that will be easily reduced without anæsthesia, but it is not usually wise to lose time in trying this. If easily reduced without anæsthesia it will be still more easily reduced with it, and with less pain and less shock. But another consideration is of importance, namely : " What is the degree of skill possessed by the operator in the matter of taxis ?" Taxis in the mind of those not practised in its performance means a rather hazy variety of pushings, pullings, and massage manipulations without very definite method or object, save the ultimate one of reduction. I will not describe taxis or try to give hints in its performance. It can never be learnt from books, it cannot even be learnt from experience in a case or two. It requires much study and observation of anatomical details and of the procedures adopted by experts

actually working at the bedside. A practised hand will often reduce a hernia in a few moments, upon which other men have been exerting all their energies for hours with fruitless results. Use no roughness ; sin rather in the direction of insufficient force ; do not shook the patient ; do not tire yourself out. The limit of time that should be expended in efforts toward reduction has been very variously estimated ; some have advised an hour or two, others have spoken of a few minutes. Those that have experience in the matter need no time limit, their efforts are nicely graduated, no excess of force is brought to bear, and they can strive for a fairly long time without doing harm. The unpractised hand, having obtained full muscular relaxation, having placed the patient in the most favorable position, and having gently manipulated the parts in the manner that appears to him most rational, should not strive long ; ten or fifteen minutes of gentle efforts should be sufficient. A longer trial will commonly prove a waste of time and energy, and a waste of resisting power in the patient.

The attendant has made up his mind that his efforts at reduction are unavailing, or he has been rewarded by success. In the former instance, operate immediately. Brook no delay that is not indispensable. Remember that the constricted gut in an hour or two may be converted from a dark purple mass that has still the power to rapidly recover, into a dark chocolate hued thing whose chances are very bad, and which in a very short time may show points of sphacelation and compel a resection or the establishment of an artificial anus. The operation is an easy one as a rule, the man who can cut at all and who is able to catch a bleeding point should be at home in its performance. A well-known old teacher of this city was wont to tell his students to cut through the Latin names and get to the gut. The incision is made over the site of hernia, in the general direction of the Poupart's ligament. If the point of your knife be afflicted with timidity and hesitancy, keep on cutting through every thing over a grooved director, a simple blunt probe introduced beneath the tissues, or anything else that may take its place ; a hairpin may serve if nothing else be at hand. You are soon rewarded with the sight of a gray-blue, smooth, rounded mass, with a distinctly fibrous covering, showing beneath its transparent textures dark blotches that are probably caused by extravasated blood. You pinch up this sack and incise it throughout its length, and you see the coil of gut, sometimes alone, more often accompanied by omentum. You may be able to reduce both these structures one after the other without further incision. By gentle manipulation you may be able to press out

the gas that distends the intestinal loop, when it may easily be reduced in some instances. Scarcely any force at all should be exerted in doing this. The reduction not being easily accomplished, you proceed at once to enlarge the opening by nicking the constricting ring. If the hernia be direct, the direction of the cut should be inward and upward, if oblique, outward and upward. Several nicks may be needed. If the amount of omentum be so large as to prevent reduction, it should be resected and the bleeding points tied, when a slight amount of manipulation with expression of contained gas, if possible and safe, will commonly suffice. The wound is then sewed up. If drainage be needed, a few strands of horse hair, silk, or a rubber tube, can be used. In case of sphacelation or insufficient vitality the gut, not being any longer strangulated, may be retained outside of the body under warm antiseptic dressings until it shall have demonstrated its power of repair or the necessity of further treatment. The formation of an artificial anus is the easier method, while resection gives the best result as regards ultimate effects, but offers greater risks to the patient, unless the operator be skillful in intestinal surgery.

Much more should be said to give a complete description of the operative measures; I have had no intention of so doing, however, but merely of roughly outlining the mode of procedure.

My last case of operation in strangulated inguinal hernia shows how a rapid operation even in a desperate looking case may be of service. I was called in October last to see Mrs. S. the wife of a physician. She had a very large strangulated hernia that had resisted all efforts at reduction. I was prepared to operate on the spot, but repairs to the house had put it in such bad condition, for the time being, that I had the patient placed in a carriage, and at once conveyed to the French Hospital. When I first saw her, Mrs. S. had a pulse of over 130, had a pallid, cadaverous appearance, and seemed to be rapidly going further and further toward a condition of intense shock. Upon her arrival at the hospital she had to be stimulated while still in the carriage. She was taken at once to the operating room and made ready for operation. Her condition was then so bad that I hesitated to operate, but her husband and myself agreed that it would give her the only chance of recovery. She was etherized. I rapidly cut down to the sac, opened this, found a loop of intestine very black and lacking lustre, and a large quantity of omentum. The omentum was immediately resected after nicking the ring, and allowed to return to the abdominal cavity, whereupon the intestinal loop, upon which a warm antiseptic solution had constantly been allowed to flow, was easily reduced.

The wound was sutured after a rapid attempt at radical cure, and the patient placed in bed. The patient's husband, who remained in the room during the operation, was of the opinion that her death would be a matter of but a few hours. Careful stimulation, to as little an extent as possible, and warm water bottles in the bed soon improved her pulse, which had risen to over 140, and the patient began a process of recovery which was quite rapid and uneventful.

The general aspect of the case was exceedingly bad, and if the husband had not been an intelligent physician, the operation would probably enough have been refused by the parents, as it was a case in which I would have felt justified in extending but very little hope to the family. A delay of another hour in the case would in all likelihood have proved fatal.

It seems to me that the proper view to take of a strangulated hernia is that it is something demanding immediate operation, that reduction by taxis is a lucky accident upon whose occurrence we cannot count, and that not a minute is to be spent in anything that is not a direct preparation for operation. Then, if the surgeon is disappointed in his operation by the successful outcome of taxis, he will feel that he was ready for the worst that could happen.

I consider the performance of the operation more easy, in the majority of cases, than that of taxis. Serious complications may occur, but they are not such as would have been relieved by the taxis, and hence must be faced sooner or later, unless the patient is allowed to die with no attempt at relief. If the physician can find no professional assistants, he can etherize the patient himself, and give the cone to a layman who will, with some supervision, commonly manage to keep up the anaesthesia fairly well. Do not be afraid of the operation, but fear injudicious taxis, and especially fear delay.

The preceding remarks must not lead the reader to believe that my purpose is to advocate promiscuous and immediate operation in all cases. The surgeon who operates on a patient evidently at death's door, and without the benefit of consultation, assumes a responsibility that is very grave, and fatal results are much more apt to be followed by the unjust recriminations of friends and relatives after an operation than when the patient dies unrelieved.

Some writers go to the extreme of appearing to think an operation unnecessary in the majority, if not even in all of the cases that may present themselves. Dr. Alexander Dallas, in the Medical News of November 28th, 1891, asserts that he no longer believes that in a considerable proportion of such cases reduction is impossible, and operative interference compulsory. Dr. Dallas, who states that his experience in the

matter has been large, has never had to operate for strangulated hernia, and never has had any trouble in accomplishing reduction since adopting his present method, which consists in injection of morphine and atropine, repeated till the patient is comfortable, and the administration, every five minutes, of from a half, to a cupful of a mixture containing : Strong black coffee Oj, fluid ext. of ergot 3 ii—3 iv, and, when the pulse is weak, gr. $\frac{1}{2}$ — $\frac{1}{4}$ of strychnia. After half an hour the rupture has generally become flaccid and gentle taxis reduces it.

We do not doubt the good effects of such treatment, and of taxis in hands that have become skillful. But we think that a fairly large number of cases will be found that will prove rebellious to it. A long run of successes never precludes the possibility of failure. To the last statement of Dr. Dallas' article, we must take the strongest exception. After stating that among 545 recorded operations for strangulated hernia, there were 260 deaths, he says: "By using the above simple method of treatment, the necessity for operating would have been obviated and the death rate would have been *nil*." How such a conclusion can be arrived at we cannot conceive. Lives have been saved after the gut was sphacelated and ruptured by resection with or without the formation of an artificial anus. We cannot agree that such cases would be given any sort of chance by reduction, peritonitis would instantly occur and soon be followed by death. We must remember that many of the cases that furnish such statistics were nearly moribund at the time of operation. The operation itself, in these anti-septic times, is not one of great severity, and very seldom in itself is the cause of death. We cannot but think that Dr. Dallas has been singularly fortunate in the nature of the cases of strangulated hernia which he has had to treat, and that he will at some time be compelled not necessarily to change, but certainly to modify his opinion in the matter. We do not doubt that among 545 cases of strangulated hernia a certain number must have been saved from absolutely certain death by the operation, and that among the deaths that did occur were a certain number that neither Dr. Dallas or any other man could have saved. I have been called to see a case of strangulated hernia that died ten minutes after my arrival at the house, and before any measures whatever except slight stimulation and a moderate injection of morphia and atropia had been administered. Had I been called a couple of hours before, I would certainly have operated.

The condition of profound shock which so often exists, is sometimes rapidly fatal even before any serious change has taken place in the strangulated gut, and patients will die even after reduction in

such cases, notwithstanding all that can be done to overcome the shock, and however skilfully and gently the taxis has been performed.

Neither is it to be thought by the reader that immediate efforts at taxis and operation are invariably advised ; there are sometimes cases suffering from little shock, in whom hot or cold applications, opium, etc., will produce a condition in a few hours, especially if the hernia be large and old, that will be most favorable for the performance of taxis or operation.

In conclusion I may state that a large number of the cases brought to hospitals for operation, or in which a consultant is called for the same purpose, have previously been subjected to too severe and unguarded attempts at reduction by taxis.

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AMPUTATION OF THE VAGINAL PORTION OF THE CERVIX UTERI IN CASES OF SUSPECTED CARCINOMA.*

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PERHAPS the term *provisional amputation* or "*exploratory excision*" would better express the object of the proposed operation, since it is suggested as a means of completing an unsatisfactory diagnosis. Collaterally its object is to avoid hysterectomy in the absence of a lesion sufficient to warrant that operation. It will be generally admitted that the examination of scrapings from the endometrium or of bits of tissue from the vaginal portion is often unsatisfactory and inconclusive, and the removal of sufficient tissue to admit of careful and thorough study may so mutilate the organ as to offer no advantage over amputation. The proposition is, to a certain extent, analogous to that of preceding the resection of the intestine by colotomy. It is in harmony with the author's frequently expressed views in favor of early diagnosis, and hence of the necessity that the general practitioner seek the advice of the specialist whenever a patient suffers with a stubborn erosion or ulcer of the mucous membrane of the vaginal portion, or with hemorrhage from the endometrium for which he cannot satisfactorily account. The suggestions of this paper have no bearing upon cases in which the existence of malignant disease is clear and unmistakable. For such cases hysterectomy is the proper procedure, or palliative curetting and cauterizing if hysterectomy is inadmissible. The fact that doubtful cases have frequently been brought to the author's attention, and the knowledge that the uterus may be, and has been removed when malignant

*Abstract of paper read at the eighty-sixth annual meeting of the New York State Medical Society at Albany, February 2, 1892.

disease did not exist have furnished the occasion and excuse for this paper. The conditions which render diagnosis difficult in the class of cases under discussion are :

1. Endometritis with or without hemorrhage from the interior of the uterus.

2. Hyperplasia with or without fissure of the os and endometritis.

3. Erosions, ulcers, and glandular disease.

I. Endometritis is a comprehensive term. The simple catarrhal form does not concern us at present and its importance is frequently overestimated. If there is a manifest inflammatory process with a more or less abundant discharge of pus, blood, or mucus, curetting will often be necessary and the scrapings should be carefully examined. If improvement does not ensue in a few weeks, the discharges of pus, blood and epithelium continuing and the microscopical examination also having proved inconclusive, the vaginal portion should be amputated. Then we shall be able to determine whether anything more radical will be necessary, and no harm will have been done if it is proven that the disease is purely inflammatory.

II. Hyperplasia of the vaginal portion may suggest the infiltration of malignant disease and it may occur in both parous and nulliparous women. The unusual size is an element of suspicion. If there is increase in size and density and also fissure of the os and eversion of the endometrium, the suspicion of malignant disease will be a reasonable one. For such cases amputation will often be preferable to trachelorraphy as it will give us an abundance of tissue for examination, and it has been the author's experience that plastic operations upon dense and badly nourished tissues are not likely to give satisfactory results.

III. Erosions, ulcers and glandular disease of the vaginal portion are frequently mistaken for malignant disease. Erosions are usually accumulations of granulation tissue, which should disappear after curetttement and the removal of the endometritis or other morbid condition by which they may be caused. If a cure does not follow such treatment, the vaginal portion should be amputated. Ulcerations, apart from those which are clearly malignant, may be traumatic, syphilitic or chancroidal, rodent, and papillomatous. An ulceration which is at first benign may become malignant after a longer or shorter period. A sufficient number of well-authenticated cases are on record to prove this statement. Amputation is indicated if healing does not follow other methods of treatment. Glandular disease has derived importance from the careful investigations

of Ruge and Veit upon this subject. They teach the necessity of the greatest watchfulness in all cases in which this condition is present. The use of astringent and caustic applications upon ulcerated tissues may arouse an incipient malignant disease to increased activity, hence there is always a certain amount of danger in their use. This statement is supported by the author's personal experience as well as by a number of recorded cases. The amputation of the vaginal portion is suggested at this time in preference to the high amputation of Schroeder and Baker because of its superior importance as a means of diagnosis, and the lesser degree of injury which it inflicts upon the uterus if malignant disease is not present. It will be equally curative with the more extensive operation in a certain number of cases in which malignant disease is in its incipiency. Amputation of the vaginal portion will also be of service occasionally in cases in which malignant disease and pregnancy coexist, and the pregnant condition may not be interfered with. Nothing new is offered in regard to the method of performing the operation, which is usually a simple one. It is usually performed by the author with curved scissors and tenaculum or volsella, though in cases in which the tissue is very dense a knife will frequently be found preferable to scissors. The circumstances connected with each individual case will determine whether it is better to cauterize the wounded surface of the uterus to allow it to granulate, or to cover it with the contiguous mucous membrane of the vagina.

Indications for Colotomy.—Dr. Kelsey, (*Therap. Gazette*, Jan. 1892) gives the following indications for the performance of colotomy :

1. In all cases of cancer which cannot be completely extirpated, where the disease is liable to produce any degree of obstruction, or is broken down and discharging into the rectum. It is possible to have cancer near the rectum which will cause no symptoms referable to the rectum, and hence furnish no indications for operation.

2. In all cases of incurable non-malignant ulceration where the disease is too extensive to admit of complete resection of the ulcer.

3. In all cases of threatened obstruction where the obstruction cannot be permanently overcome by attacking it directly ; for example, the obstruction due to old pelvic cellulitis in women.

4. In all cases of recto-vesical fistula.

5. In cases of congenital malformation where the rectal *cul-de-sac* cannot be dissected out and brought down to the surface.

Clinical Department.

PACHYSALPINGITIS—FREQUENT URINATION.

BY PAUL F. MUNDE, M. D.,

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GENTLEMEN:—This patient is a woman twenty-eight years of age, who has been married two years and has one child a year old. She menstruates every three weeks and the flow lasts for five or six days. She has pain on both sides of the abdomen, is constipated, and has a profuse, white discharge.

The history this patient gives us of her trouble is of doubtful significance, because she is a Bohemian and cannot talk the German or English language intelligibly. She has had an attack of pelvic peritonitis, and when I first saw her, about three months ago, she had quite a large exudate in the pelvic cavity, more distinctly made out on the right side than on the left, but associated with pain on both sides of the abdomen. Under treatment by tincture of iodine, etc., this exudate finally disappeared. There is still present an immovable uterus, and by examining posteriorly you will find an irregular, knuckle-like mass in Douglas's pouch which is undoubtedly one of the tubes, thickened, hypertrophied and adherent.

Sometimes, it is almost impossible to tell the exact character of the pathological condition present in a case like this, the exudate being so diffuse as to cover completely the tube and ovary, obscuring them and rendering it impossible to distinguish between the tube and ovary. I operated upon a case like this a couple of weeks ago, and after I had cut down upon the parts, I dug out what I could feel there. The exudate was so solid and the ovary and tube so covered by the exudate that I had to remove the ovary piecemeal. I mention this incident to illustrate to you the difficulty in trying to find the exact pathological condition present in a case like this. I believe this mass, however, is a knuckle of tube behind the cervix.

This patient is certainly very much better than she was when she first presented herself for treatment, but she will never again have normal appendages. The tubes are undoubtedly enlarged by the formation of new tissue, and instead of being the size of a goose quill you will find them to be as large as your index finger. The canal of the tube is smaller than normal and the walls are thickened, narrowing the calibre of the tube. I call this condition pachysalpingitis; we have here all the tissues

hypertrophied and increased in amount, chiefly the fibrous and muscular elements. So what has taken place in the tube is the result of a catarrhal salpingitis, accompanied with local attacks of peritonitis.

This is an entirely different pathological condition from pyosalpynx and hydrosalpynx, where the tubal walls are thin on account of their distention from contained fluid.

This condition of pachysalpingitis is almost always associated with adhesions, but there is no fluid in the tube whatever, as is the case in the pathological conditions I have just referred to. If you cut the tube open you will find it practically dry, but sterility is just as absolute as in the case of pyosalpynx.

Perhaps in the earlier stages of pachysalpingitis the tube may be restored to its normal condition, but when the disease has existed for a number of months and there have been repeated attacks, your treatment should be solely directed to the relief of pain, and if you can accomplish this, you must rest satisfied. Still one must not be too positive in the prognosis, for I have seen, in my own practice, some instances of women with this condition who afterwards conceived and had two or three miscarriages.

The next patient is thirty-nine years of age, has been married twenty years, and has given birth to three children, the last one nine years ago. She flows every four weeks and the flow lasts for three days at a time. Her last menstruation was three weeks ago. She now complains of pain upon both sides of the abdomen and frequent urination.

Frequent urination is a common symptom with many women and we cannot do much for it, particularly if they have had a number of children and have a flat and flabby abdomen. The muscular fibres at the neck of the bladder have lost their tone. The administration of tincture of nux vomica and cantharidis may do some good, or you may stretch the neck of the bladder with the hope of affording relief. I am now speaking of weakness of the neck of the bladder from child-bearing or cystocele.

When a woman complains of bladder symptoms sufficient to annoy her, the first thing to do is to examine her urine for albumen, not because this has much to do with the bladder, but it is well for you to know if the kidneys are normal. I have now a patient under treatment in whose case I am sure a wrong diagnosis was made. She is a young lady who a couple of weeks ago had a severe paroxysm of pain on the left side, with sub-normal pulse and temperature. A diagnosis of periovaritis was made by a friend of mine who saw her in consultation. I examined her and found nothing the matter with her ovary. I thought she might be hysterical and asked her if she passed large quantities of water of a pale

color. She told me she did not, but that the water, on the contrary, was darker than normal. I examined it and found it had a specific gravity of 1029, with excessive quantity of urates. I also found pus, mucus, and hyaline casts present, together with renal epithelium. This patient had recurrent attacks of renal colic with passage of small calculi down an inflamed ureter which gave rise to the paroxysms of pain she complained of. I have seen a number of such cases where the diagnosis was confirmed by the appearance of calculi, several days afterwards, in the urine. So I had no doubt of the diagnosis in this case and that she had nothing whatever the matter with her ovaries.

I wish to say a word in this connection about drawing off the urine with a catheter. It used to be considered quite a feat of skill during my student days to draw off the urine under a cover. Although this is quite a trick to do, I have no doubt that many catarrhs of the bladder are brought on by this feat of dexterity. In order to avoid carrying anything into the bladder which may give rise to infection, such as pus, vaginal secretion, blood, or anything that does not belong there, I always have the lips of the vulva separated, the vestibule cleaned with bichloride solution, and then carefully exposing the urethra I introduce a glass catheter. The catheter should be always kept in a mild carbolic acid solution.

I have had two cases of acute cystitis brought on this winter in my private hospital through carelessness on the part of a nurse in the use of the catheter. Both patients had been operated upon by myself without the occurrence of any trouble from the operation. So I would advise you to be very careful with the use of the catheter in this respect.

AMPUTATION OF THE FEMUR—APPENDICITIS—EXPLORATORY INCISION OF THE KIDNEY FOR CALCULUS.

BY CHARLES McBURNEY, M. D.

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GENTLEMEN:—The little patient I show you has suffered a severe accident from a railroad car having passed over the middle of the right thigh severing the lower extremity below that point. He sustained considerable shock as a result of the accident. I brought him before the class at the time to illustrate the benefits that are derived from antiseptic surgery in such cases as this. I cut away the sloughing tissue under an anæsthetic, tied the main

arterial trunk, and disinfected the end of the stump, covering it up with an antiseptic dressing and put the boy to bed in the hospital. The whole procedure did not occupy over a few minutes to carry out. Had I then subjected this boy to a complete operation, which would take some time to perform, the chances are that he would have run great risk of losing his life, before he had recovered from the original shock of the injury.

When he was brought here the second time he was in an excellent condition. I then amputated higher up on the thigh leaving sufficient skin flaps to cover the end of the stump, and the patient suffered no depression whatever as a result of the operation.

Before the era of antiseptic surgery we could not treat a case such as this in that way. The point then was to get rid of the slough and destroyed tissue at the very earliest moment, and do an operation so as to avoid the danger of sepsis, before the shock resulting from the trauma had subsided. The boy now has a normal temperature, is in excellent condition, and the slight discharge is undoubtedly due to the original contusion of the tissue, with the rubbing in of dirt on the railroad track. If I had attempted to amputate, or insisted upon amputating through tissues that had not been injured at all, I should have been obliged to do a hip joint amputation at a very considerable risk to the boy's life. The section made here is just below the lesser trochanter and is a very much better thing for the patient than a hip-joint operation. The wound will be frequently dressed as long as there is any tendency to a discharge.

The next case that I show you to-day is a robust man twenty-nine years of age, who gives us the following history. About eighteen months ago, without any previous illness, he had an attack of pain in the abdomen, more or less on the right side, and most marked in the region of the right iliac fossa. The pain came on suddenly, without vomiting and without chills. He was relieved by means of hot applications, so far as the pain was concerned. He suffered however from dull pain in this region, which lasted for about six days from that time.

Four months ago, that is fourteen months after the first attack, the patient had a second attack, commencing in the same way as the first, which compelled him to go to bed on the second day. He had this time a chill, followed by a fever, and an increased degree of pain. He was given enemas, and hot applications were made over the affected part which relieved the pain, but the tenderness continued and lasted for seven days, during which time the patient remained in bed.

Toward the latter part of December he had a third attack similar to the other two, but the pain was much more severe and lasted for eight days. He had no chill, but developed some fever this time. He was treated in the same manner as in the former case by rest in bed and hot applications over the abdomen. After the eighth day he got up, feeling well again. Nevertheless, he still has pain confined to the region of the right iliac fossa, and comes here for the relief of that pain.

I have received no information from any of the physicians who has treated this patient; but from the history of the trouble he has himself given us, taken in connection with the examination I have myself made since he has come to the hospital, there is no question at all, as to the location of the disease. This patient had, undoubtedly, at the time of the first attack, an inflammatory process commencing in the vermiform appendix, associated probably with a certain amount of peritonitis; but how much we are unable to state, not only from the history but from our knowledge of the case. The majority of this class of cases has no peritonitis at all, the disease being wholly confined to the appendix itself.

When I examined this patient I found the region of the iliac fossa ordinarily resonant to percussion, and no tumor of any kind present. On making pressure at particular points with the tip of one finger over the area included in the inflammatory process, the greatest pain was very exactly between an inch and a half and two inches from the anterior spinous process of the ilium on a straight line drawn from that process to the umbilicus. This may appear to be an affectation of accuracy, but so far as my experience goes, the observation is a correct one.

The question is, what shall be done by way of treatment for this patient? From what we know of this disease we know that this man will almost certainly have other attacks. I do not mean that every man who has trouble with his appendix will have the same trouble again, but any individual who has attacks of this kind lasting for a week, with fever pain, and other symptoms, so far as we know from experience, will have another attack. There are cases that have terminated after the first attack, in which an abscess formed and emptied itself into some one of the hollow viscera or externally, and thus a cure was brought about. There is no history of any abscess in this case and certainly of none having emptied itself. We have, therefore, to deal here with an appendicitis that has recurred a number of times, and one that is certain to recur, and may recur with a severity so great as to baffle any method of treatment we may bring to bear on it.

There is a great difference of opinion in the minds of some surgeons in regard to the treatment of these cases of appendicitis. There are some who are timid and look upon operation as a last resort, allowing the individual to have continued attacks of the disorder, while there are others who look upon a surgical operation as almost absolutely safe in this class of cases. To the latter class I belong. I feel I am dealing with a disease that is certain to cause the patient's death, and recurrences are sure to give him a great deal of anxiety, producing interference with his health and great loss of time. Some of these attacks occur many times a year and subtract so much from a patient's enjoyment of life. I feel then that when a patient has a number of these attacks an attempt should be made to relieve him by the only means by which we can promise a cure of the malady. I have no hesitation then in operating on such a case, and my experience now has been of such a character that I can safely speak of the prognosis in these cases. The mortality in cases of appendicitis, if operated upon early or in the interim of the attacks, is extremely small, and there is not one operation that has so good a statistical record as the one for appendicitis. The mortality from surgical measures in this disease is but one per cent., and that can hardly be said of any other abdominal operation.

I shall endeavor here to expose the diseased organ with as great care as possible and as little injury to the parts. The operation is one that has always a certain element of doubt about it in regard to the character of the procedure to be adopted and the exact amount of handling of the parts, because no matter how careful your examination through the abdominal wall is, before you make the incision you are not able to determine the exact situation of the appendix and its relation to other organs. So when one does this operation he should do it with the distinct feeling that every case will present some feature peculiar to itself. There is no rule that will help us after the abdomen has been opened, for the appendix may be bent down, turned inward or backward. We have, however, one thing to guide us in these operations and of which we can almost always avail ourselves in recurrent disease of the appendix, and that is the situation of the base of the appendix. This should be the first thing sought for when the peritoneal cavity is opened. Of course, in some cases, the appendix comes into view as soon as the abdomen is opened, but that is purely accidental and happens very rarely. When it does so, the operation is very much simplified. The appendix is then to be separated from its mesentery and tied off at its base. Practically this operation is an extra-abdominal one. In many cases the simple searching for the

appendix is the whole feature of the operation. It is particularly difficult to find it in cases of repeated attacks of appendicitis, for the preceding attacks may have caused adhesions of the appendix at some very distant point. I recently did an operation that gave me a great deal of trouble in searching for the appendix. This patient had had repeated attacks of the disease and should have been operated upon before. In searching for the appendix I sought for it over an area six inches in diameter. This would seem to include every possible situation it could occupy, yet in this case it was found attached to the right kidney.

In searching for the appendix the best thing to do is to try and find the base, and very often the caput coli gives us the best means of finding the base. When you have found the caput coli you have something to start with, for then you can readily find the place from which the appendix is given off. When you find the base you can then follow it along and break up any adhesions that exist until you come to the tip. When the whole appendix has been found and its relations with other parts determined, then continue the dissection from the tip to the base, or very frequently it is better to dissect from the base to the apex. It depends, of course, upon the way the apex is situated.

From the history we have in this case it is very difficult to determine the exact condition of this appendix, and even by studying the large number of cases that have been treated by operative procedures, we are still unable to say what amount of disease is present in a given case. We may find here a simple chronically thickened appendix, quite hard and firm, and containing only a little foreign material in the form of fluid feces. We may find an appendix with a knuckle in it, that is, doubled on itself, which would be sufficient to give rise to pain, fever, and repeated attacks of appendicitis. Or we may find here an abscess that has become encapsulated, due to perforation of the appendix in one of the previous attacks, and a small quantity of pus so covered in with a thick inflammatory wall that the patient is not absorbing septic material.

I am very loath to leave in the minds of students the idea that this operation is one to be universally recommended as a routine practice in every case of appendicitis. I do not know any class of operative procedures that may be more difficult to perform, and as you do not know which one is going to be easy or which difficult, I warn you not to resort to surgical measures unless you feel competent to do the operation. I look upon one of the real contraindications to this operation the absence of knowledge and every facility that goes to make a successful issue.

Formerly in operating on these cases I employed and recommended an incision carried along the outer edge of the rectus muscle through all the soft parts down to the aponeurosis of the external oblique. Now I carry the incision a little further out, so as to get within the muscular fibres of the internal oblique and transversalis, and then cut deliberately through. That gives one a good muscular wall on either side of the wound and is far less likely to lead to weakness in the abdominal parietes. After I have found the appendix and broken up all adhesions I shall then tie it off with catgut ligatures, and pack the wound with iodoform gauze. The packing I will remove on the third day and replace it with a less quantity, as the cavity granulates rapidly. I do not insert a drainage tube any more unless I have a cavity freely secreting pus. Over the whole wound a complete dressing will be applied, and the patient kept in bed for about four weeks.

The next patient gives us a history in which I place a good deal of confidence in the matter of diagnosis. He is a man fifty-seven years of age, and twelve years ago suffered from severe tenderness and constant pain in the left lumbar region, sometimes passing blood in the urine after a severe attack of pain. He was unable to work for three months. He entirely recovered from these symptoms, and remained well for a period of seven years. At the end of this time he had another attack of pain in the left lumbar region more severe than the preceding one. He found the reclining position so uncomfortable that he was obliged to sit up, and since that time he has never been free from pain, with exacerbations at certain periods.

I have examined his bladder for calculi and have found none present. Three examinations of the urine have been made and in all three the urine was found turbid, acid in reaction, with a specific gravity 1024, and traces of albumen. White blood corpuscles were also present in large numbers and all three specimens contained some red blood corpuscles.

In making a physical examination of the patient I find no tumor which can account for the history of continuous pain in the left lumbar region. Examining over the situation of the kidney and making pressure from behind, the patient complains very acutely of pain and is susceptible to even a very moderate degree of pressure.

Taking everything in this man's case into account, we have abundant reason to justify us in believing that there is disease connected with the left kidney, of a chronic nature, and there is sufficient evidence to exclude the diagnosis of a neoplasm, except in one respect. A small vascular papilloma of the renal pelvis may give rise to the symptoms complained of

by this man. If, however, he had such a condition as that, the hemorrhage would occur much more frequently and he would not have been at any time in a condition of such perfect health as he enjoyed seven years ago after a very severe attack.

It is, then difficult to think of anything that would account for this man's trouble, except the presence of a calculus in the kidney. A calculus can rattle about in the pelvis or in the substance of the kidney, and give rise to great pain and a large amount of hemorrhage. It may very readily change its position without causing any pain or disturbance of the functions of the kidney. Then again a slight exertion might set up irritation of the kidney and bring about a repetition of the symptoms. Nevertheless, though the signs of a calculus in the kidney are very satisfactory to me, I always approach all these cases of supposed renal calculus with a certain amount of doubt of what I am going to find when I cut down on the organ. I have seen more than one case in which I was perfectly satisfied with the diagnosis of calculus and where none was found present after the kidney had been extirpated and examined with the utmost care. So, there must always be some doubt in the mind of the operator in these cases of supposed calculus of the kidney.

What I propose to do in this case is to make an incision commencing about a half an inch below the lower border of the last rib and extending sufficiently in a transverse direction across the loins, so as to allow me to examine carefully with my fingers the kidney. If I can feel the calculus then, of course, further procedures are clearly indicated. If, on the other hand, I do not feel it, I shall then deem it necessary to puncture the kidney at various points; for very frequently calculi are found buried in the substance of the kidney which can be detected only by means of an instrument. Fifteen or twenty punctures at one operation will do the kidney no possible harm and may in themselves afford relief from the pain complained of. If the stone can be found by means of punctures, I will try to remove it even though I have to cut through the kidney structure to get at it.

One other point comes up for consideration in this connection and that is, how is the kidney to be treated after the stone has been found. I have a pretty clear idea of what I shall do in a case like this. I think it is a bad practice to extirpate the kidney in the majority of cases, at the time you remove the stone. No matter how disorganized the kidney may be, I think it is a wiser plan to give free exit to the discharge of pus, and at a subsequent operation do a nephrectomy.

In speaking of the non-desirability of taking out the kidney at the time of operation; I have omitted to mention one condition where the indication is to

take it out, and that is hemorrhage. If the hemorrhage has been excessive and the case has been fairly tested by the ordinary means for the arrest of hemorrhage, then you are justified in extirpating the kidney. The patient is already a good deal exsanguinated. You cut down on the kidney and find no calculus, and the question at once comes up what are you going to do for the hemorrhage? Are you going to sew up the wound because you have not found the calculus? You should extirpate the kidney in order to put a stop to the hemorrhage.

The operator then cut down on the kidney, and after a very thorough and careful search, both digital and instrumental, he failed to find any evidence of calculus. The patient had not lost much blood and his symptoms were not such as would justify a nephrectomy. The operator thought it quite possible that the patient had small papillomatous tumors of the kidney, and should conditions arise to demand surgical intervention at a subsequent period, he would then be disposed to perform a nephrectomy.

Outstanding Ears.—Mr. William Thomas, of Birmingham, describes, in the *British Medical Journal* for October 17, 1891, the following operation by which he has succeeded in making flaring ears lie close to the head. The operation consists in the removal from the inner surface of the pinna of an elliptical piece of skin, dividing the cartilage of the pinna down the centre of the exposed cartilaginous surface, and uniting the margins of skin by sutures. The widest part of the skin removed should be from one-half to three-quarters of an inch, but of course this depends on the degree of deformity. It is necessary to divide and turn back the cartilage, not only to remedy the deformity but also to allow of easy approximation of the skin margins, and care must be taken to avoid division of the outer skin with the cartilage. The after-treatment consists in the application of a small cotton-wool pad between the head and the pinna—the latter being fixed by a bandage until healing is complete. Immediate union takes place, and there is hardly any perceptible scar, the skin of the ear having great vitality. A simple method of keeping the outstanding ears back without operation is to fix them by a piece of lint soaked in collodion, and placed between the pinna and the head, the ears being bandaged close to the head until the collodion is firmly set. The adherent splint thus formed will hold the ear in position for two or three weeks, when it may be renewed. It is, however, only a temporary measure. The principles of the operation are applicable to various malformations of the pinna.—*St. Louis Medic. and Surg. Journ.*, Jan. 1892.

Abstracts and Selections.

REMARKS ON SUB-DIAPHRAGMATIC AND RECTAL ABSCESESSES OF APPENDICAL ORIGIN.*

BY ROBERT F. WEIR, M. D.,
Surgeon to the New York Hospital, etc.

MUCH thought has been given of late years to the subject of appendicitis, and a large experience has already been gathered in aid of the proper treatment of this disease. Much, however, remains to be investigated, and points of importance in the natural history of the disease, particularly in the so-called catarrhal form, are yet unsettled. Every surgeon who has had to see, or operate on many of these cases appreciates, however, to a very strong degree the irregularities and variations that may present themselves in any given instance. Hence, for one reason, the great interest this department of surgery has for an operator. He feels that his highest skill may be called for at any moment. He has learned that the apparently late-forming tumor, which seemingly has glued itself to the abdominal parietes, and which presents itself at first sight as an abscess in a safe condition for a simple incision, cannot always be easily differentiated from a deeper abscess that may require the opening of the general peritoneal cavity in order to reach it. He knows, too, that many an abscess of like origin, especially if its opening is postponed beyond a week's time, or if the local symptoms have progressed with rapidity (I refer chiefly to a decided enlargement of the tumor), may demand the establishment of a lumbar counter-opening in order to effect safe and proper drainage. Unexpectedly, there may happen, among the variations occurring, conditions like those which I beg now to lay before you, in a brief detail of two cases that have come under my charge in the last fortnight. The first case is one where the abscess located itself between the diaphragm and the liver. It was found in the person of a man, aged about fifty, a patient of Dr. Pierson, of Roselle, N. J., from whom the history was obtained that he had had, for several years, attacks of colicky pain of short duration and without jaundice, which were most acutely felt across the epigastrium, and never in the iliac fossa, and without gastric symptoms. Some two weeks before I saw him, that is to say, on November 7th, he was seized with a severe pain in the right iliac region, with vomiting and fever. The acute symptoms, however, subsided under rest and anodynes, and he was considered to be doing fairly well, though kept in bed

by weakness. His temperature remained, after the fifth day, generally near the normal, but the tenderness persisted in the cæcal region, and there was inability to urinate, save with the catheter; no tumor was felt there, nor were there any chills. Two days before I was summoned the pain increased in severity and vomiting set in, which persisted and increased in frequency, and it was thought, moreover, to have a fecal odor.

At my examination, November 25th, I found the patient vomiting a bilious green fluid every ten or fifteen minutes, having a rank odor. His temperature was nearly normal, 99° F.; pulse, 130; the facial expression was bad, and he had an occasional hiccough. The abdomen was generally distended, though soft and free from pain on the left side. In the right iliac fossa nothing was to be felt, but by percussion dulness was elicited, running from the liver line some three or four inches below the ribs and extending toward the median line. Above, in the epigastrium, there was a line of resonance reaching outward half-way along the ribs. In the right flank, between the ilium and the ribs, was flatness on percussion, but as tenderness was not here elicited it was doubtful if the abscess cavity extended so far. I was puzzled in outlining the mass, as no edge of a tumor could be plainly made out, even after ether had been administered, and percussion even gave a varied note. With this, there was over the belly of the rectus, just above the umbilicus, some redness and pitting. Nothing was felt per rectum. The diagnosis ventured on was that there was a sub-hepatic abscess of either appendical origin, or from perforative ulceration of the gall-bladder, or perhaps only a large empyema of the gall bladder itself. His antecedent colicky pains squinted somewhat in the direction of an hepatic origin of the abscess. An incision was accordingly made from the ribs to the umbilicus, along the outer edge of the right rectus muscle. The deeper tissues of the abdominal parietes were found œdematosus, and on opening with a small incision the peritoneum, gas in large quantities and pus intolerably fetid but not fecal in odor, were discharged. The fluid was allowed to escape slowly, as the jet showed the great tension of the abscess-walls and its severe pressure on neighboring parts. After a quart of pus had escaped, the opening was enlarged and nearly another quart was evacuated. The finger was then introduced, and subsequently, as this failed to reach the bottom of the abscess, a long abdominal glass irrigator was passed in for exploratory purposes. It reached upward to the right nipple and also to the median line of the thorax, and nearly to the linea alba in the abdomen, and then was swept back to the

* Presented at the meeting of the Practitioners' Society, held December 4, 1891.

renal region and downward to the crest of the ilium. The wound in the peritoneum was enlarged upward and downward to the length of the original skin incision, and an inspection of the abscess cavity better secured. It was seen to be a subdiaphragmatic abscess, the interior wall of which was formed above by the liver, which had been crowded inward and backward, and below by the thickened omentum, which, by its adhesions, especially near the umbilicus, and a little below this point, had shut off the general peritoneal cavity. In crowding toward the iliac fossa, which, it will be remembered, even under ether gave no decided evidence of tumor in that region, a track just large enough to admit the exploring finger was detected, leading evidently to the appendix. A counter-opening of considerable size was made in the lumbar region, and through this two large rubber tubes were introduced, one of which was passed into the track leading to the iliac fossa, and the other to the large abscess cavity. Two other tubes were put in through the anterior opening, one running toward the median line and the other between the liver and diaphragm. A final irrigation of boiled water was made, iodoform gauze packed around tubes, and the anterior wound partially closed. The patient was much exhausted, but by hot rectal stimulant enemata, elevation of the limbs, etc., and general heat, reaction was established after a few hours.

I learned, however, that his exhaustion, after a temporary improvement of twenty-four hours with cessation of vomiting and hiccup, recurred, and that the patient succumbed November 27th. No autopsy.

Sub-diaphragmatic abscesses arising from a perforated or gangrenous appendix have not infrequently been recognized at autopsies, and have been best described by Leyden; but until the publication of Dr. Coupland's cases in the *British Medical Journal* of March 23, 1889, only ill-directed surgical efforts were made for their relief. Since that time a small number of such cases have been reported, and their frequent origin from appendicitis admitted. In an article "On the Treatment of the So-called Perityphilitic Abscesses" I called attention, some two years ago, in analyzing a hundred autopsies from such abscesses, to the fact that in seven instances there had been found purulent depots of appendical origin running up to and behind the liver. These suppurating tracks I found were in each of these cases entirely within the peritoneal cavity, though Coupland speaks of such abscesses as though they were to be found outside the peritoneum. This I believe to be an exceptional route, and to be accounted for as are the ordinary extra-peritoneal ap-

pendical abscesses, by necrosis destroying the parietal peritoneum and in this way allowing access to the extra-peritoneal planes. This view, which was the cause of much contention on my part in the early discussions on perityphilitis, is now so well established as to need no further discussion, except in such a special case as has been presented.

The route by which the abscess reached the liver in this case is, I believe, the one that will be most frequently encountered. It is true that in the autopsies referred to, the pus had travelled along the right dorsal gutter to reach up behind the liver, but it will be remembered, in reference to this point, that about a year ago it was my opportunity to present to this Society four cases of abscesses from perforation of the gall-bladder which had pursued a course between the parietal peritoneum and the omentum downward to the iliac fossa, where they simulated an appendicitis. Another circumstance which surgeons familiar with abscesses originating in the appendix will corroborate, is that not infrequently purulent collections of this latter character will be found, either by reason of a short omentum or from perforation of the omentum, to be situated outside the apron, that is to say, between it and the parietes. In this way, if adhesions are insufficient to bar its progress, the pus may work its way upward as described. I would like here to refer to another point. In the treatment of this very large abscess occurred an incident which strongly confirms me in my long-acquired disbelief in the alleged usefulness of the aspirator needle. As I was about to make my incision it was suggested that aspiration be first made. Now, I am loath to use the instrument, as its negative results often suggest surgical delay, and its chance of help in cases where help is most needed, as in small collections of pus, and where other symptoms are sufficiently present to determine a course of action, is a very slight one. In fact, my only reason for its employment is not as an aid to diagnosis, but as a means to convince a timid or doubting practitioner, or the family of the patient, that pus actually exists in the tumefaction that may be in question. I made in this case a puncture and drew only blood. The subsequent operation revealed I had crossed a thin portion of the abscess and had plunged into the liver, and yet two quarts of pus were present. The withdrawal of the needle was too quick to permit pus enough to appear to show in the blood already aspirated.

The second case which I wish to bring to your notice is one where the abscess not only extended from the iliac fossa to the under-surface of the liver, but also by a separate formation projected toward the rectum, where by an additional incision, it was

opened and drained. Rectal abscesses of appendical origin are not common. Pepper and Lange have already urged, and justly, the necessity of a rectal examination in all cases of appendicitis, and this applies particularly to its late stages. The latter surgeon has, moreover, presented several cases where the abscess was successfully treated by the rectal incision only. Its rarity is shown by the fact of this being the first time in which it has occurred to me in a somewhat large number of abscesses originating in the right iliac fossa. And in this case, indeed, I was nearly misled, for, though thought of, when beginning the operation, I purposely refrained from exploring the rectum, not only to preserve my fingers aseptic, but also because from its non-occurrence in my other cases, I considered it improbable to be present in this one, and it was only at the end of the operation work in the abdominal parietes that it was felt that the surgical rule should be complied with to render the cure complete. The nearness to error only confirms the value of the rectal examination in all cases.

The history of the case is as follows :

A boy, aged thirteen, was admitted to the New York Hospital, November 28, 1891, with the history furnished by his physician, Dr. Nammack—who had vainly urged earlier interference—that he had been seized for the first time with right iliac pain with vomiting on November 21st. Until sent to the hospital he had grown steadily worse, and though the vomiting had ceased his fever and prostration had continued. When examined by the house surgeon his temperature was $102\frac{1}{2}$ ° F., pulse, 120. The right side of the belly was so tender as to preclude much handling. He was sent to the operating room, the surgical clinic being then pending. I found his abdomen distended, markedly so on the right side, with a very tense, tender right rectus muscle which did not soften under anesthesia; and though considerable resistance to pressure was felt all along this muscle and to its outer side, yet no distinct tumor could be recognized. The left side of the abdomen, though tympanitic, was comparatively painless. Percussion was resonant over the whole surface. A slight flatness of note was noticed over the bladder. An incision three inches in length along the outer border of the right rectus muscle was made, running from the umbilicus downward, and as the somewhat thickened peritoneum was opened a gush of foul gas and fetid pus—the latter amounting to about twelve ounces—took place. The wound was opened to its full extent, when the cæcum, covered by lymph, was forced into the incision. The finger introduced showed this portion of the intestines to be adherent to the parietes mesially. Downward toward the appendix ran a

track of limited length, and upward toward the ends of the floating ribs was found a narrow channel, which was ascertained to lead into an abscess cavity of considerable size, which was bounded above by the under-surface of the liver, and which ran some distance toward the median line and also passed well posteriorly. A long forceps was crowded backward forcibly enough, with a boring motion, to cause it to emerge beneath the skin just below the middle of the twelfth rib. It was cut down upon from without until the end of the forceps emerged. A rubber tube of large size was then drawn through from behind forward, so as to thoroughly drain the cavity. Irrigation with boiled water was then made, another drainage-tube carried upward and inward toward the liver, and a third toward the iliac fossa. The appendix was not seen and no attempt was made, for obvious reasons, to excise it. The central portion of the wound was carefully closed by silk sutures and the antiseptic dressings applied.

In order to complete the proper routine in abscesses of appendical origin, a rectal examination was then made, and the rare condition of a projecting abscess into the lumen of the rectum anteriorly was recognized. The anus was stretched to allow of ready access to the swelling for its proper incision, and also to permit afterward the ready escape of fluids from the rectum. By a double-bladed rectal speculum the abscess was exposed and an incision with a long, straight knife made into its cavity through the rectal wall, some three inches from the anus and on its right anterior aspect. Nearly eight ounces of pus and gas escaped through the opening. Into it was passed a rubber drainage-tube which emerged from the anus. Irrigation with boiled water was made with moderate pressure only. None of the fluids passed into the cavity of the abscess, however, escaped from the abdominal wound, which had been uncovered to test this point. In other words, this rectal collection was probably a separate abscess, though all had the common origin in the appendix lesion. The rectum about the tube, as it passed into the abscess, was packed with iodoform gauze, and a large antiseptic dressing applied over the anus. Creolin gauze was here used, as bichloride applications so often irritate about the anus and scrotum.

The little patient has made an uninterrupted progress toward recovery. The rectal abscess has been washed out daily with a weak peroxide of hydrogen solution, and his bowels were kept constipated for several days by the use of morphine in small doses.

The final remark may be made that it is not always necessary to open the rectal abscess. In a few instances where the complication has been reported the usual opening in the iliac fossa for the tumor there felt has

sufficed, to empty also the rectal collection. On the other hand, the opening in the rectum has alone been resorted to by Dr. Lange. Had my patient's condition warranted the prolongation of surgical interference, I should have tried, by a perineal incision, to separate the rectum from the bladder and establish the required drainage exterior to the bowel, and thus avoid the rectal opening. Theoretically, we had better avoid opening into an abscess from the rectum, but time must show whether the clinical disadvantages of so doing are as great as supposed. In this case it was of no detriment.—*Medic. Record*, Feb. 13, 1892.

THE TREATMENT OF SEVERE PHLEGMONS.

BY PROF. HELFERICH, GREIFSWALD.

A large experience in cases of severe phlegmonous processes and purulent infiltration has enabled the author to formulate certain general principles of treatment.

In a case of phlegmon of the hand and forearm which, arising from a trifling cut on the little finger, has spread rapidly, he advises immediate resort to operation. To place such a patient in bed and apply a dressing will not prevent the spread of the septic infiltration and gangrene of the connective tissue and tendons. The patient should be bathed, if possible, and then placed on the operating table in such a position that both the flexor and extensor side of the arm is accessible. It is advantageous to place the bared arm on a small table near that on which the patient lies. After profound anaesthesia has been induced, the integument of the affected limb, especially that of the hand and fingers is prepared for operation by shaving and disinfection. The arm is then raised vertically and an Esmarch's bandage applied to produce anaemia. Oedematous swelling of the arm is not a contra-indication to the application of the bandage. If, however, the phlegmonous process has extended to the shoulder, nothing can, as a rule, be accomplished by conservative surgery and amputation or exarticulation is indicated.

An extensive incision is then made over the phlegmon, which if the little finger is affected, would pass at the side of the flexor tendon in a longitudinal direction. An assistant then draws apart the margins of the wound, which at first do not gap much, with sharp hooks. If the pus-canal near or within the sheath of the tendon has been opened, a probe should be carefully introduced to serve as a guide to the knife and scissors. Proceeding in this manner the operator penetrates more deeply into the palm

of the hand, taking care not to injure tendons, vessels and nerves, and after dividing the ligamentum carp volare he explores the flexor side of the forearm. If the phlegmon has started from the little finger the dissection is continued upward along the ulnar margin of the common flexor, but if the phlegmonous processes involves chiefly the thumb and radial side of the forearm, we proceed according to similar principles. The aim should be to completely lay open the purulent focus and the infiltrated intermuscular connective tissue. Quite frequently an encapsulated deposit is found between the muscles and even under the flexor profundus digitorum, so that the incision lays bare the interosseus membrane. The incision is prolonged in an upward direction until careful inspection and palpation of the parts shows that normal conditions prevail. During the entire operation care should be taken not to injure the diseased parts by pressure and traction on the margins of the wound. If necessary the large incision is supplemented by others, made on the other side of the palm or on the dorsum of the hand.

It is the surgeon's duty to secure arrest of the phlegmonous process by a single operative procedure, and if this is successful, as is usually the case, the patient is free from fever within three days and progresses rapidly to recovery. The author is decidedly opposed to all other methods of treatment. He has never observed favorable results from punctures, small incisions and drainage. Drainage in his opinion may be positively injurious in many cases; the rubber tubes, in consequence of erosion, may lead to arterial hemorrhage, to the opening up of tendon-sheaths, and even of the wrist-joint, with subsequent articular suppuration. He permits the use of a drain only in cases where the incision extends up to the elbow joint on the flexor side of the forearm, and where by the establishment of a counter-opening it is desired to secure an outlet for the secretions from the upper and deeper angle of the wound.

As regards the treatment of the wound the author has for some time past discarded all methods of disinfection. He was led to this course by theoretical considerations which have been realized in practice. These were, that disinfectants produced injurious and even caustic effects upon the tissues, and by absorption into the system inflicted additional injury upon a body already severely poisoned by toxic matter. For these reasons he contents himself with irrigation and mild washing of the wound with 0.6 per cent. of sodium chloride solution after the completion of the operation, so as to remove blood and pus.

The dressing is next applied, and if possible, with the patient still under chloroform narcosis. A single piece or several smaller pieces of iodoform

gauze are placed in the wound, so that all its angles and pouches are covered. Large quantities of the gauze are not necessary, a single layer suffices. The object of this is to prevent superficial adhesion of the wound margins, and assure the outflow of the secretions. Sterilized gauze would be just as efficient if it would remain unaltered for as long a time. The great advantage of the iodoform gauze is that it may be allowed to remain undisturbed for a long period, while the superficial dressing is changed daily. If at the end of eight days the layer of gauze becomes loosened, we usually find beneath it a normal granulating surface.

The region of the wound is covered with a moist warm dressing, especially one saturated with Thiersch's solution of boracic and salicylic acids (1.0—15.0—500.0), which will prevent decomposition of the secretions. Over this is placed gutta percha paper, and then a splint properly padded is carefully applied.

The Esmarch's bandage is now removed and the arm is held in a position of vertical suspension so as to diminish hemorrhage and favor the recovery of the tissues. At the end of three or four hours this posture is exchanged for a moderately elevated position of the arm upon a cushion. The dressing is changed on the following day, when the compresses which are saturated with blood are removed. These are renewed in the above described manner, but the iodoform gauze is permitted to remain undisturbed.

Under this treatment a cure is rapidly effected; the tissues recuperate, normal granulations are formed, and necrotic portions are detached. In order to attain definite curative results it is of utmost importance to bring about this condition of the wound as soon as possible. If the entire wound granulates uniformly and small necrotic areas have been excised, it may be regarded as aseptic, and there is nothing then to prevent secondary union.

Secondary suture of healthy wounds, after operations for phlegmon, gives very satisfactory results as regards the restoration of the functions of the arm and hand. If the wounds are large this procedure is performed under anesthesia and the application of an Esmarch's bandage. To produce perfect coaptation it may be necessary to detach more or less the margins of the skin. The granulations are removed in long strips with the handle of the scalpel in order to facilitate union of the tissues without an intervening cicatricial layer. The wound is carefully united by sutures, and small drains may be inserted as a precautionary measure. Tension should be avoided, for the sutures readily cut through; if necessary they may be reinforced by strips of adhesive plaster or by collodium.

Rapid healing of the wound is of great importance in order that mobilization of the fingers and hand may be begun as early as possible. For this purpose we may avail ourselves of passive movements, baths, massage, electricity, occasionally compression and fixation at night in various positions.

The method of immediate suture of the wound is regarded by Helferich as dangerous in the vast majority of cases. In the treatment of phlegmonous processes in other parts of the body than the arm and hand, he advises a similar procedure to that described above.—*Berlin. Klin. Wochenschr.*, Jan. 25, 1892.

A FEW INDICATIONS FOR LAPAROTOMY.

BY PROF. KUSTNER, DORPAT.

DURING the last three years and a half the author has performed 129 laparotomies (exclusive of three performed by his assistant), and considers this material sufficient to discuss the indications for the operation. He regards laparotomy as free from risk if resorted to in suitable cases and undertaken with proper precautions. The results of the operation, however, are sometimes disappointing owing to the formation of peritoneal adhesions, which cannot be positively avoided even in a simple laparotomy, despite of our improved technique. As regards the cause of these adhesions, the author has observed in cases where repeated laparotomies were made on the same patient, that eschars, ligatures and sutures in the abdominal cavity do not necessarily give rise to them. Kelterbon, whose results have been confirmed in the main by Thomson, found, in experiments on cats and rabbits, that even extensive eschars produced no adhesions, while foreign bodies such as sutures were more apt to become encapsulated than to lead to adhesive inflammations. One important outcome of Thomson's investigations is that disinfectants in sufficient concentration to exert caustic effects do not necessarily give rise to adhesions, as was formerly thought.

There can be no doubt that these adhesions may become dangerous. The author has observed a case where, many years after an ovariotomy, a twisting of the gut occurred around intestino-ventral adhesions. Laparotomy was performed, the adhesions separated, and the patient recovered. Such cases, however, are rare, and frequently the adhesions give rise to no symptoms.

The frequency of exploratory laparotomies in a surgeon's practice will depend upon his diagnostic ability. An unskillful diagnostician will frequently

open the abdominal cavity and find something entirely different from what he expected. The exploratory incision, however, should only be resorted to if there is reason to believe that this procedure may be of therapeutic, as well as diagnostic value. Accordingly, the author always makes the incision large enough that he can introduce the hand and also look into the wound. He cuts through the peritoneum and regards Bardenheuer's exploratory incision down to the peritoneum as of no utility. He has performed laparotomy in four cases of peritoneal tuberculosis, but is somewhat skeptical as to the curative influence of the operation in this disease. He is firmly persuaded that a goodly proportion of the cases of peritoneal tuberculosis claimed to have been cured by abdominal section were not bacillary but pseudo-tuberculosis, as has been demonstrated in his clinic by microscopical examination of the excised pieces.

Laparotomy with extirpation of inflamed tubes and ovaries was performed by Küstner in only 6 of the 132 operations, exclusive of 6 abdominal sections for extra-uterine pregnancy. Like W. A. Freund he has made the experience that gonorrhoeal salpingitis is not infrequently cured without operative measures. Baths, the application of tampons, massage and electricity, do more here than an operation which mutilates the person for life.

Septic salpingitis usually presents the symptoms of what was formerly termed parametric exudates. Laparotomy is less frequently required in these cases than a simple incision through the abdominal wall or vagina, as has been especially recommended by Fritsch.

Chronic inflammatory processes like salpingo-oo-phritis with marked involvement of the adjacent peritoneum, cases of which are frequently met with in connection with uterine retroflexion, give rise to much disturbances, and as it is impossible to cure them by non-operative treatment, the extirpation of the diseased organs is usually the best procedure.

Laparotomies for malposition of the uterus are divided by the author into two groups: those for fixed retroflexion and those for malpositions with mobile uterus. In the first group the object of the laparotomy is to separate the posterior adhesions. Afterwards the now movable organ may be sutured to the anterior abdominal wall, or if the patient is young, it may be kept in position by a pessary. To separate the retrofixing bands is not always an easy matter. The author uses for this purpose the Pacquelin, so as to prevent the redevelopment of adhesions, the occurrence of secondary hemorrhage, and of other complications.

In movable retroflexions he has seldom resorted to ventro-fixation, and then only in cases where the

change in position could not be effected with certainty by the other methods.

All operative methods of correcting movable retroflexion aim to produce peritoneal fixation in one place or another and thus to maintain the uterus in a correct position. Of these ventro-fixation is preferable to all other methods.

Ventro-fixation is especially recommended by Küstner in total prolapse of the uterus, in combination with an extensive posterior colporrhaphy. Here gards amputation of the cervix and curetting of the uterus as entirely superfluous in the treatment of prolapse, and finds that the hypertrophic condition of the mucous membrane disappears within a short time after restoration of the uterus to its normal position.—*Deutsche Medicinische Wochenschrift*, Jan. 7, 1892.

THE TREATMENT OF COXITIS.

BY L. FERRIA, Turin.

The author who is an assistant at the Surgical Clinic of Dr. Caponotto, at Turin, has observed in the treatment of joint-tuberculosis by means of injections of iodoform, that the hip-joint is less favorably influenced than the knee or wrist. The puncture is not always free from difficulty, especially if, after the first injections, the cavity has diminished in size owing to cicatricial contraction; and the local anatomical conditions are not calculated to facilitate the distribution of the iodoform at all places. For these reasons Dr. Caponotto has been led to practice a limited resection of the femoral neck in cases of coxitis, as a preliminary to injections of iodoform, so that the anti-tuberculous remedy may more readily obtain access to the articular cavity, and thus act more intensely upon the bones and synovial membranes. The removal of diseased structures was a secondary consideration in this treatment, and only resorted to in suitable cases.

The procedure is as follows: A straight incision, six to eight centimetres in length, is made through the skin and muscles from the apex of the greater trochanter toward the posterior spine of the ilium. The capsule is divided in the direction of the longitudinal axis of the femoral neck as far as the limbus cartilagineus. After the head of the bone has been forced out of the acetabulum by appropriate movements of the limb, it is removed almost entirely with hammer and chisel, no matter whether it be diseased or not, so that a certain amount of space exists between the surfaces of the joint. Any exudations that may be present are evacuated, granulations, cheesy masses, sequestra, etc., are removed with a wad of gauze or the curette, although no effort is made to eliminate

all the diseased tissues. After the hemorrhage has been arrested a freshly prepared ten per cent. mixture of iodoform in glycerine is slowly poured into the wound, until it is entirely filled, and then the incision is closed by an exact suture. Peri-articular abscesses are evacuated through the existing wound or by additional incisions; if possible they are curetted or simply punctured with a trocar and injected. A light dressing is applied and the limb placed in a good position. Weight-extension was not employed (except temporarily in one case), inasmuch as there were no indications calling for its use, but the final results from an orthopædic point of view were quite satisfactory.

The author reports two cases of children, respectively five and seven years of age, in which this treatment effected a rapid cure of tuberculous arthritis of the hip-joint. Both patients were so greatly improved three months after the operation that they were able to walk without support, and one of them was left with comparatively little displacement of the limb. In view of the unsatisfactory results frequently obtained from the use of iodoform injections in hip-joint tuberculosis (Krause reports only four cures among thirteen cases), the author strongly urges the adoption of the above described method of treatment.—*Centralblatt f. Chirurgie*, Feb. 13, 1892.

THE SURGICAL TREATMENT OF BASEDOW'S DISEASE.

By DR. H. DREESMANN, Bonn.

THE author reports three cases of exophthalmic goitre treated by ligation of the thyroid arteries, a method first recommended by Kocher, in 1889. All the three patients were females who presented marked symptoms of the disease, pronounced protrusion of the eyes, large tumor of the thyroid gland, cardiac palpitation and frequent pulse, muscular tremor, anaemia and debility. In the first case Kocher had ligated two of the thyroid vessels on the left side and one on the right, and when the patient came under Dreessmann's observation marked improvement was present, which went on to complete recovery. In the second case ligation of the inferior thyroid artery on the left side was performed by Trendelenberg, while on the right side it was found possible to tie only a branch of that vessel. The cure was nearly complete at the time of the report. A like result was obtained in the third case in which Trendelenberg tied the four thyroid arteries.

Judging from the fact that none of these patients had derived any benefit from internal treatment which was given a thorough trial, the author con-

cludes that the operative treatment of exophthalmic goitre is superior in efficiency to all other methods. In the cases collected by the author from the literature, which were subjected to various surgical measures (resection or extirpation of the thyroid gland, ligation of the thyroid arteries), marked improvement was usually effected within a very short time after the operation. Within a few weeks or even days the pulse rate was greatly reduced, and the cardiac irregularity had almost entirely disappeared in most instances. The exophthalmos became rapidly less, and sometimes disappeared altogether. The other disturbances, such as muscular tremor, sleeplessness, excitability, sweating, were also greatly relieved or removed. The general health was restored.

The appearance of tetany and cachexia, which has been observed by Ganser after extirpation of the goitre, may be prevented by leaving behind a portion of the thyroid gland. The question as to whether extirpation of the thyroid or ligation of the arteries is the preferable method of operation can only be decided on the basis of larger statistics. Billroth has justly pointed out that ligation of the inferior thyroid artery may be more difficult than extirpation. On the other hand, the former procedure is less likely to be attended with injury of neighboring parts and also gives much better cosmetic results. According to Kocher the chief advantage of ligation is that it renders the goitre smaller and firmer, and thus more accessible to a subsequent strumectomy; but if this be true, it seems more rational to the author to perform an extirpation or resection from the first. Kocher lays stress upon the point that in cases of exophthalmic goitre the vessels tear rapidly, in consequence of which severe hemorrhages may occur, and for this reason he abstains as much as possible from strumectomy in this disease.

In cases of Basedow's disease where cystic goitre coexists, nothing can be expected from ligation and extirpation is usually indicated. If it is decided to perform ligation in any case of exophthalmic goitre, the four thyroid arteries should be tied at one sitting, as this procedure is more likely to produce diminution of the goitre. The danger of complete suspension of the functions of the thyroid gland after ligation of the arteries, to which attention has been directed by Kocher, has not been met with in any of the cases thus far reported.

As regards the results obtained, extirpation, resection, and ligation give equally good results. The only difference noted by the author is that improvement takes place within a shorter period of time after extirpation than after ligation, especially as regards the reduction of the pulse rate and the diminution of the exophthalmos.

No matter what be the operative method adopted, much importance should be attached to proper after-treatment. All disturbing factors should be avoided, especially physical excitement. The strength of the patient which is usually greatly reduced by the disease, must be restored by proper feeding, and the author has also observed favorable effects from the internal administration of arsenic in connection with galvanic treatment.—*Deutsche Medicinische Wochenschrift*, Feb. 4, 1892.

THE RADICAL TREATMENT OF PROSTATIC HYPERSTROPHY.

BY DR. K. EIGENBRODT.

THE author presents the following conclusions on this subject, which are based upon an experience of five cases and a thorough study of the literature of the operative treatment:

1. Observations have shown that in most cases of obstructing hypertrophy of the prostate a radical operation is perfectly feasible. This consists in a suprapubic prostatectomy, by which all the protrusions at the vesical neck due to the enlargement of the prostate should be removed, if this is possible.

2. Prostatectomy gives the best results if performed at an early period, and early operations before the occurrence of cystitis would be indicated in all cases if it were possible to prevent the development of a cystitis due to the operation itself.

3. Even in advanced cases we can sometimes effect considerable improvement and even a restoration of the function of voluntary urination.

4. In cases apparently cured by the radical operation great attention should be paid to the persisting weakness of the bladder (residual urine), and when necessary the patients should be treated for this condition and kept under observation.

5. In obstructing prostatic hypertrophy, the obstacle to urination is not so frequently due as is generally believed, to a valve like occlusion of the urethral orifice by a prominent lobule or wall at the vesical neck. Much more frequently this is caused by a general and uniform enlargement of the vesical end of the prostate, in connection with the formation of a *cul de sac* in the bladder. If during the performance of prostatectomy, in the latter case, everything that protrudes into the bladder cannot be removed, we should attempt to secure a free passage for the urine by a *wedge-shaped*, deep excision at the posterior margin of the internal urethral orifice.—*Beitrage zur Klinischen Chirurgie*, Bd. viii, Hft. 1.

THE TREATMENT OF CHRONIC SPRAINS OF THE FINGER-JOINTS.

BY ROBERT W. LOVETT, M.D., of Boston.

I feel that I owe an apology for presenting a paper upon so trivial a subject; but the affection in question is a common one, and one which is exceedingly intractable and troublesome, and I have not been able to find any satisfactory mention of its character or treatment in the text-books. It is not uncommon in surgical practice, and in the last two years a fairly large number of cases have come under my observation in private and in hospital practice. It seemed to me that it might be of practical interest to mention the peculiarities of the affection and to cite one or two individual cases, at the same time speaking of a plan of treatment which is not by any means new, I fancy, but which has proved successful in the largest proportion of the cases which have come under my observation.

The greater proportion of cases among those that I have seen have occurred in women, although men have by no means been exempt; and in both men and women neurasthenic symptoms have in many cases been associated with the local symptoms of synovitis. In the greater majority of cases the finger synovitis was due to some injury, such as a strain or hyperextension of the joint; but in several instances the patient could assign no cause for the synovitis, although it is likely that in these there was some overuse of the affected finger or some unconscious traumatism.

The joints most often affected have been the phalangeal articulations, and on examination they have been seen to be enlarged, and most often shiny. Sensitiveness is very marked, especially over the lateral ligaments, and local heat is a common symptom. Motion is very much restricted, or complete stiffness of the affected joint may be present, and attempted manipulation is very painful. Generally the sprained joint is held in a position of partial flexion, and any attempt to extend it is very distressing. In severe cases the whole finger may be swollen.

The pain and sensitiveness in general are more than would be expected from the local symptoms. The swelling may often be considerable, and fluctuation may be present, due to the synovial distension; but these are not necessarily the most painful cases. In other cases, with comparatively little enlargement of the joint, much sensitiveness may be present, and the pain may be severe enough to keep the patient awake at night. It is this disproportion of pain and local symptoms which makes this especial affection noteworthy, and distinguishes it in a measure from other sprains.

The association of neurasthenic symptoms with such finger sprains seems common enough to suggest that in many cases they are intimately associated pathologically. In these cases it is easy enough to account for the excess of pain, but this will not explain all instances where the sensitiveness seems excessive. The symptoms of which I speak are excessive nervousness, persistent basal headaches, tingling of the hands and feet, sensitive spots over the spine, and the like. I cannot state definitely in what proportion of cases these have occurred, but I am sure that some of them have been present in more than half of the cases that I have seen.

Most of the cases have been of some weeks or some months standing when they were seen. The affection seemed at first so trivial that it appeared to the patients not worth attending to, and it was only when it became apparent that it was not wearing off, but was getting progressively worse, that they applied for treatment.

The affection seems to show little or no tendency toward spontaneous improvement : in fact, the disposition seems to be to an increase of pain and sensitiveness over what followed the injury, and simple therapeutic measures seem of no avail.

There is but little to be said with regard to the pathology of the affection, at first it appears to be a simple acute synovitis due to injury, but it soon assumes the type of a chronic synovitis and probably passes on into an arthritis in severe cases. That is, the bone becomes affected as well as the synovial membrane, causing thickening and distortion of the affected joint. It would seem that in cases where the stiffness had been of some months' standing, adhesion would have formed which would lead to obliteration of the joint, but even in such obstinate cases, the restoration of perfect mobility seems possible in a large proportion of cases.

Rheumatism and rheumatoid arthritis undoubtedly have a part in keeping up certain cases of chronic finger sprains, but beyond this it is not possible to speak definitely of the etiology. Certain cases of spontaneous synovitis of the finger-joints clearly belong to this class.

The treatment which after much experimentation has seemed to be the best, is complete immobilization of the affected joint for a period of two to four weeks, followed by gradual discontinuance of the splint and the use of massage and hot water.

In general the tin finger-splint has been used and the affected joint freely painted with iodine during the time of its immobility. In private practice it has been more comfortable to apply the copper-wire splint, which is done by winding the finger in sheet wadding and then winding a spiral of thin copper wire about it

with one or two lengths running from the tip to the base of the finger. This gives complete and comfortable immobility, but requires constant adjustment and is liable to interfere with the circulation. After the finger has been immobilized for such time as seems best according to the severity of the case, the use of hot-water soaking is begun along with massage every second day. Gradually the splint is discontinued without much regard to the pain caused, and the patient encouraged to use the finger.

Two points have appeared to the writer to be established : one is that simple fixation, however prolonged, is not enough to cure the affection, and secondly, experience in the more severe cases has shown that the immediate use of massage is not tolerated. Consequently a period of immobilization must be insisted upon which at the time seems to be accomplishing very little, but which probably is an essential part of the treatment. And at the close of this period of fixation there is often but little improvement to be noted, and pain on movement seems perhaps as severe as in the first place. But this must be disregarded and massage begun.

Salicylate of soda three times a day, or oftener, in ten-grain doses, has formed part of the writer's treatment, because in some cases there was evidently a rheumatic element, and because in the majority of cases it was found to control the pain and seemed to hasten the convalescence. The general condition often needs attention.—*Boston Medic. and Surg. Jour.*

IMMEDIATE SUTURE OF RUPTURED URETHRA.

BY G. BARLING, F. R. C. S.

The author reports four cases of ruptured urethra, treated with immediate suture. In all cases he failed to obtain primary union ; one case died from suppuration and pneumonia, the others of suppurative pyelo-nephritis. After mentioning the unsatisfactory results of reported cases, he proposes the following plan :

Having done perineal section, and found both ends of the torn urethra, the catheter should be inserted into the bladder. Suprapubic section should then be done, and the bladder being opened on the point of the catheter the opening should be enlarged until it admits a large-sized drainage tube easily. The catheter should then be removed, and as many sutures inserted into the urethra as seem necessary ; four will generally be sufficient for a complete rupture, one on the roof, one on each side, and one on the floor. The suture on the roof should then be tied, and as full-sized a catheter passed as the urethra will easily take,

this will support the edges of the wounded tissue and to prevent them from unfolding. The remaining three sutures are then to be fastened, and the catheter removed with the utmost care, so that its point does not stick either into the roof or the floor of the sutured part.

It might be an advantage to retain the catheter for a few hours to act as a splint to the wounded urethra, but as already pointed out a little urine may trickle by it and get into the urethra, or, when the catheter is withdrawn, some of the reparative lymph may have stuck to it, and the drag on the tissues may tear apart the edges of the urethra; for these reasons he believes it will be best to remove the catheter. Experience has shown that though the torn ends may be widely separated they may be brought together with very little or no tension on the stitches.

Part of the perineal wound may be brought together with deep sutures, and the remainder left open in case of escape of urine there or of suppuration. Subsequently the suprapubic drain must be looked to to see that it is absolutely free, and it should be kept *in situ* for at least ten days, the bowels should be confined for a week to keep the perineal muscles quiet, and, all going well, a catheter should not be passed for three weeks.—*Birmingham Med. Review*, Dec., 1891.—*Epitome*.

It appears to the author that with the evidence which is before us we should accept the following as a rule for practice: *In every case of ascites in woman, the propriety of explorative abdominal incision should always be carefully considered; not with the view of establishing a certain diagnosis alone, but with the hope of effecting in exceptional cases a cure.*

In his paper Dr. Thomas records eight cases in which the cure of ascites and the saving of life has been effected by laparotomy. These eight cases are presented merely as corroborating his position as to the feasibility of the plan in general, and do not represent his whole experience with it. He is certain that were he to examine his notes for the past quarter of a century and the books of record of the Woman's Hospital for the twenty years of his connection with it, as attending surgeon, he could double the number here recorded.

A New Treatment of Congenital Dislocation of the Hip-joint.—That indefatigable worker, Professor Lannelongue, has recently been led to study this disease, and on December 23, 1891, he announced to his colleagues of the Société de Chirurgie the discovery of what he considers to be a rational remedy for this malady. A dozen pathological specimens in the museum of the Hospital Trousseau show clearly that the displacement is due to the absence or, at best, rudimentary development of a cotyloid cavity, a like absence of a capsule, and a rudimentary femoral head. By resecting the head of the femur the only result obtained is the subsequent shortening of the limb by interfering with the growth of the femur. Nor is the obvious indication to create a new acetabulum fulfilled by detaching a periosteal flap. Mindful of the sclerogenic properties of zinc chloride discovered by him, M. Lannelongue has utilized his method as a means of raising a ridge of new bone round the head of the femur, and so preventing its displacement. On November 17th he performed this operation on a little girl, aged three, the subject of this disease. The patient being under the influence of chloroform, and the limb being maintained in extension, twenty drops of a 10 per cent. solution of Zn Cl, were deposited by means of a syringe on the surface of the bone at eight different spots just above the femoral head. A week later a hard osseous ring was clearly perceptible at this situation. A fortnight after the first operation a second injection of the same solution was practised, with the effect of still further accentuating the acetabular ridge. The tiny subject of this interesting experiment was presented at the meeting. The profession will await with curiosity the ultimate result of this novel essay in the field of constructive surgery.—*Lancet*.

EXPLORATIVE INCISION IN ASCITES IN WOMEN.

In an instructive article in the *New York Journal of Gynaecology and Obstetrics*, Prof. T. Gaillard Thomas says that many women go to their graves from ascites, who might have been restored to health by surgical procedures. In these cases a diagnosis of cirrhosis of the liver, or of tubercular or chronic peritonitis, is made by the attending physician and corroborated by a consulting physician; and the patient and her friends, fully satisfied that all that modern science can do for her has been done, resign themselves to the inevitable and accept an issue which they suppose cannot be avoided. He has in his own experience seen so many women snatched from certain death by this simple procedure that he does not doubt that if graveyards had tongues and could tell their secrets, the number of graves found to be filled with ascitic women, who might have been saved by laparotomy, would appal us.

Explorative incision, practiced with antiseptic precautions now at our disposal is not a dangerous procedure. If a good result attend it, a saving of life is the outcome; if it reveal an incurable organic disease, no evil will usually accrue; and even if a fatal issue should be its consequence, we will be forestalling death a short time only, in a praiseworthy effort at the securing of life.

Surgical Memoranda.

Tuberculosis of the Testicle.—Dr. Reboul, of Marseilles, treated three cases of this disease by injections of naphthol-camphor. He injected 4 to 5 drops every eight to ten days into the thickened tissues of the testicle and epididymis. Marked improvement was effected, the diseased parts becoming more indurated and contracted; and these results are the more noteworthy since in two of the cases other measures continued for a long time had been unsuccessful.—*Allgem. Medicin. Central Ztg.*

Cholecystenterostomy.—Dr. Helferich recently reported a case in which two months previously he had performed this operation. The symptoms pointed to the presence of calculi in the common bile duct, but it was found impracticable to remove the calculi through an incision in the duct. An opening was therefore established between the gall bladder and small intestine. The result was good; the marked jaundice disappeared and the patient's general condition was greatly improved.

Treatment of Cystitis.—Guyon (*Ann. der mal. des organ. genito-urin.*, x, 1) recommends corrosive sublimate as an excellent remedy in cystitis, but especially in vesical tuberculosis. The remedy is employed either in the form of irrigation or instillation, the latter being preferred by the author. The strength of the sublimate solutions varied from 1-5000 to 1-1000. At the beginning of treatment 20 to 30 drops are injected into the posterior urethra, and this quantity is gradually increased to 60 drops. The more severe the pain the less should be the quantity injected. Before the instillations the bladder must be emptied. In blenorragic cystitis the author has obtained excellent results from instillations of nitrate of silver 1-5 : 100.

Wounds of the Heart.—Dr. Jos. Lumniczer has observed five cases of injury of the heart and pericardium, only one of which terminated fatally. His conclusions are as follows:

1. It is possible to detect a wound of the heart both from the local and general symptoms, the most important of which are the signs of cardiac compression.

2. Inasmuch as the symptoms of cardiac traumas in many cases do not appear until some time after the injury, it is frequently impossible to make a diagnosis immediately after its occurrence.

3. The physical signs of heart injury are an enlargement of the area of cardiac dulness, the presence

of splashing noises coincident with the heart sounds, metallic quality of the heart sounds, weakness and arrhythmia of the pulse.

4. If obvious signs of cardiac compression exists surgical intervention is indicated. The hemorrhage should be arrested and the blood evacuated from the pericardium.—*Deut. Mediz. Zeitg.*

Artificial Cornea.—The *Berlin. Klin. Wochenschrift* publishes a seventh case of transplantation of cornea by Professor V. Hippel, of Königsberg. There was a dark-brown central discoloration of the cornea, three millimeters in diameter, and reaching down to the membrane of Descemet, which had been caused by the action of nitrate of silver. Cocaine having been applied, the non-transparent part of the cornea down to the membrane of Descemet was cut into by a little trephine, the crown of which was four millimeters in diameter, and carefully removed. The author then excised by the same means a similar piece from the whole thickness of the cornea in a young rabbit, and transplanted this to the eye of his patient. It filled the wound exactly, and was on a level with the rest of the cornea. Iodoform was applied, and both eyes were bandaged. Healing proceeded without any trouble, and in six weeks the patient was discharged with a completely transparent cornea.—*Lancet.*

Ununited Fractures in Children.—A meeting of the Medical and Chirurgical Society in London, in December last, was devoted to discussing the subject of "Ununited Fractures of the Long Bones in Children." Mr. D'Arcy Power introduced the discussion by a paper in which he gave an analysis of sixty-three cases. He remarked that the subject had been almost entirely neglected until the publication of Sir James Paget's paper in his work entitled "Studies of Old Case Books." Mr. Power said the statistics he had collected entirely bore out Sir James Paget's conclusions. The results of treatment were most unsatisfactory. Out of the 63 cases, bony union was obtained only in 6, and in 7 cases the patient was relieved, but in 36 cases no improvement whatever ensued on treatment. The author believed that ununited fractures were becoming more common, at least in England, though he pointed out that in France non union was very rare—not in children only, but in adults. He remarked that the ease with which plaster-of-paris could be applied was one of the dangers in using it. If the child was carefully watched, nothing could be better; but in plaster there was great liability of a child's leg shrinking, and movement could then occur inside the case.—*Medic. Record.*

Saline Infusion for Severe Hemorrhage.—Dr. R. H. M. Dawbarn, of New York, has devised a novel method of saline infusion, which he has employed with marked success in a case of severe uterine hemorrhage and which commends itself on account of its simplicity: The fluid injected is a solution of table salt in water that has been boiled, in the proportion of a heaped teaspoonful of the salt to a quart of warm water. All the appliances needed are a rubber bulb syringe, an ordinary soft rubber catheter or a small rubber drainage tube, and an ordinary hypodermic needle (a large size preferred). To avoid a cutting operation, with the searching for a small collapsed vein, the tying in of a cannula, etc., Dr. Dawbarn makes the injection into the femoral artery, which can almost to a certainty be felt beating just above Poupart's ligament, even if the patient be pulseless at the wrist. The technique of the proceeding is as follows: Take the needle—not as yet attached to the catheter—and push it directly into this artery, going slowly, until bright-red blood is seen to well up from within the needle. As soon as the arterial blood is seen in the needle, slip over its base the catheter—already attached to the syringe, the nozzle of which has entered it at the eye, and both being filled with the salt-water, as hot as the hand can tolerate—and tie a thread tightly about the catheter, securing it to the base of the needle. Now, holding the needle in place firmly and steadily, pump the fluid directly into the arterial current. To avoid possible pumping of air by an old or leaky syringe, make an abundance of the salt-water, and keep the entire syringe, with the hand working it beneath the surface. In the case reported a full pint of the hot salt water was thrown into the artery, taking nearly half an hour. After an interval of half an hour a second full pint was injected into the connective tissue of the thigh, as the circulation was then sufficiently strong to absorb the fluid into itself. Other restorative measures (hot applications, hot beef tea enema, small hypodermics of strychnine, etc.), were also employed.

Treatment of Suppurating Inguinal Glands.—Mr. H. Percy Potter refers to a class of cases frequently met with, in which, after an excoriation or strain of the tissues of the groin, but often without any assignable cause, simple adenitis makes its appearance in connection with the glands running parallel with Poupart's ligament. The inflammation seldom ends in resolution, because the patient fails to recognize the importance of rest; thus suppuration ensues, and if the abscess discharge spontaneously, or if it be incised, a sinus remains leading to a gland, and this passage is found to burrow both superficially

and deeply. The author has recently adopted the following treatment in ten cases in which chronic indolent sinuses existed. An anæsthetic was administered and free scraping with Voikmann's sharp spoon performed, as well as the removal of the glands and sloughing adenoid tissue. The surface is first cleaned and rendered as far as possible aseptic. In practice it is not found necessary to divide bridges of tissue between neighboring sinuses, so long as the under surfaces of these are carefully scraped. The spoon is freely applied to all parts covered by granulations, and a smaller sized-sized instrument passed along the canals leading deeply. All exposed glands are torn away or twisted from their attachments, and the bed on which they lie scraped. The cavity is washed out with a solution of chloride of zinc (twenty grains to one ounce), a thick pad of antiseptic gauze is applied, and firm pressure maintained by means of a spica bandage. As a precautionary measure, and in the more extensive operations in order to avoid movement, an outside bracketed splint is used.—*Practitioner.*

Intravenous Saline Infusion.—Dr. Pye Smith recently reported the case of a man, who had suffered from profuse hemorrhage after a severe gunshot wound of the left leg. Amputation being necessary, but the patient unfit for it, a pint and a half of three-quarters per cent. saline solution was injected into his saphenous vein with marked improvement, and amputation just below the knee was performed. Circulation then failing again, another pint and a half was injected before he recovered from the ether, and at once his pulse and color were greatly improved, and in a few hours he had completely rallied, and subsequently made a good and rapid recovery.—*Medical Press.*

Fracture of the Nasal Septum.—Dr. W. J. Clegg has observed two cases of this injury during the past year, in both of which the cartilage of the septum was displaced so as to occlude the left nostril. In the first case, by making four cross-cuts through the cartilage eight triangles were formed, and these were separately fractured at their base. The septum could then be pushed into place and the nostril plugged to support it. At the end of three weeks the result was perfect.—*Lancet*, Jan. 2, 1892.

In the April issue of this Journal will be published the following interesting original articles: "A Rare Case of Urethral Calculi in a Child," by Dr. Thomas H. Manly, of New York; "Chronic Uterine Catarrh and Endometritis," by Dr. H. Champlin, of Cleveland, O.; and the continuation of Dr. Dallas's interesting paper on "Hernia in Infancy and its Correct Treatment."

Antiseptic Memoranda.

Rat-Tail Sutures.—In the *Medical News*, Dr. E. Oliver Belt, of Washington, states that he has made extensive use in ophthalmic operations of a fine fibre derived from the rat's tail. The tail is skinned and soaked in water for several days, when, on slight manipulation, it splits into perhaps a hundred fibres, each about eight inches long. They are placed in alcohol, and about once a month, for two or three days at a time, they are soaked in 1 to 5000 solution of corrosive sublimate. Dr. Belt recommends these fibres in cases where a strong and fine animal suture is required. He says they are much finer than those prepared from the opossum's tail, which he has seen used by Dr. Chisholm, of Baltimore.—*New York Medical Journal.*

The Causes of Wound-Infection and the Use of Antiseptic Agents.—Roswell Park, in an elaborate article in the *American Journal of the Medical Sciences*, November, 1891, after discussing it from a pathological standpoint, makes the following practical applications: Infection is of two kinds—auto-infection, as from the alimentary canal, and that by contact. The principal sources of the latter are: (1) The skin and hair; (2) instruments; (3) sponges or their substitutes; (4) suture materials; (5) the hands; (6) drainage materials; (7) dressing materials; (8) miscellaneous.

(1) Infection from the skin and hair. To obviate this, it is advised to apply, for a day or two, an antiseptic ointment of ten per cent. resorcin or lysol and lanolin, then washing with sapo-viridis and an application for a like period of a solution of creolin or lysol five per cent., or cold, aqueous solution of hydro-naphthol to which a little glycerine has been added, then washing with hydro-naphthol, soap and equal parts of alcohol and ether or alcohol and turpentine.

(2) Instruments are to be put in a dry sterilizer for half an hour at a temperature of 140° to 150° Cent., and delicate instruments passed through a flame.

(3) Sponges are to be soaked for a week in an antiseptic solution or dry sterile absorbent material used.

(4) Sutures. Silk is to be wound on glass spools, put in a test-tube and kept for an hour in a steam sterilizer on two occasions. Silkwormgut is to be immersed in aqueous sublimate solution for a few hours and then preserved in alcohol. Catgut is to be immersed in benzine or ether, dried and soaked in one per cent. sublimate solution for one or two days, then

dried and placed in juniper oil and finally in alcohol containing corrosive sublimate, 1 to 1,000.

(5) Hands. To be thoroughly washed and rubbed with a tablespoonful of mustard, then washed with sapo-viridis to which five per cent. lysol, creolin or hydro-naphthol has been added, then immersed in a strongly colored solution of potassium permanganate, followed by immersion in oxalic acid solution, and this latter rinsed off.

(6) Drainage materials. He dispenses with drainage in the following cases: *a*, Deliberate operations about the brain and calvarium. *b*, Amputations in uninfected tissues. *c*, Excision of joints other than tubercular. *d*, Herniotomy, both for strangulated and radical cure when no gangrene is present. *e*, Osteotomy and other operations for deformities. *f*, Most operations for the removal of tumors, etc.

(7) Dressing materials had better contain some soluble antiseptic.

(8) Miscellaneous sources of infection, such as drops of perspiration, hair, infected nozzles, removal of instruments from the aseptic area, etc., should all be guarded against.—*University Medic. Magazine.*

Dermatol.—Dr. Chas. A. Powers (*Medical Record*) has employed dermatol in upward of one hundred and fifty cases in his surgical class at the out-patient department of the New York Hospital, and is highly satisfied with its effects. This substance which is a basic gallate of bismuth, was first recommended to the profession by Drs. Heinz and Liebrecht as a substitute for iodoform, over which it is said to possess the advantages of being odorless, non-poisonous, and non-irritating. Dr. Powers used it in cases of fresh wounds of all varieties, on abscesses, ulcers, burns and the like, as a dusting powder, in a ten per cent. ointment with vaseline, or in a ten per cent. collodion emulsion. Many of these troublesome cases which had shown but little progress under the ordinary dressings healed astonishingly fast. A characteristic effect is the marked decrease in the secretions observed under its use.

In some cases opportunity was offered to compare its effects with those of iodoform. So, for example, in a man with extensive symmetrical, specific ulcers on the anterior aspect of each leg. On one leg dermatol was used, while iodoform was applied to its fellow. The ulcers on the leg on which dermatol was employed were healed in less than one-third the time required by those on the extremity subjected to iodoform. In a patient with burns of the second and third degrees, one portion was treated with dermatol, another with iodoform, and similar results were obtained.

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Editorial Department.

NEW YORK, APRIL, 1892.

AN ENGLISH VIEW OF AMERICAN SURGERY.

We have read with much interest the Surgical Impressions of Rutherford Morison, M.B., F.R.C.S., Eng. and Edin., published in the Edinburgh Medical Journal for March. These impressions seem to be the result of decidedly less prejudiced observation than is usually met with at the hands of foreigners. They convey the general idea that surgery in America stands well abreast of that of other countries, and we can find no word of condemnation of any of our methods. In one or two instances differences in practice are mentioned, but judicial decision for or against is avoided. Mr. Morison has seen a great deal during his limited stay in our country, and shows himself to be a man of great energy and perseverance, by the accomplishment of so much work in so short a time.

Mr. Morison gives a very entertaining account of his visits to American hospitals. He was surprised to learn that at the Roosevelt Hospital, New York, all strictures of the urethra are dealt with by internal urethrotomy, and speaks of the bougies used in the after treatment as terrible weapons. At Bellevue hospital he witnessed a laparotomy for removal of the uterine appendages, and comments upon the skill displayed by the operator, but was somewhat startled to see "the

unceremonious way in which this operation was performed." The impression conveyed to his mind was that "the operation was as exciting to the operator as the operation of trimming the nails is to an ordinary mortal." Judging from the number of cases he observed in which the appendix had been excised for perforating ulcers, he concludes that appendicitis is more common in America than in Europe. American surgeons, he says, claim that their hospitals and nurses are better than the English. The first claim he does not deny, but as regards the second he expresses his preference for the English nurse, although acknowledging that the system of training nurses in this country by lectures on subjects connected with their profession tends to increase their efficiency and could be profitably adopted in England. His concluding remarks will bear repetition :

"American much more resembles German than English surgery. Germans have an indescribable way of taking possession of an anæsthetized patient, giving the impression that he is entirely their own, and that they mean to do just what they like with him. German instruments are large, forceps like tongs, scissors like sheep shears, retractors like garden rakes. The German surgeon is seldom in doubt, and has an excellent embryological, bacteriological and pathological explanation of all his cases and results ; if there is a mistake, something is to blame, not the surgeon. Then there are other German specialties, such as, metal-handled knives, the inevitable introduction of needles by a holder, the wearing of special operating apparel, and the selection of only such operations as can be performed with deliberation and in open daylight ; all have more or less influenced American surgery. Results are, after all, the test, and on these a judgment must be formed ; and from this standpoint, my belief is that if English surgeons do not wish to be overtaken, they must put their best foot foremost."

THE LATE PROFESSOR D. HAYES AGNEW.

A wide gap has recently occurred in the rostrum of the great names of American surgery. By the death of Dr. D. Hayes Agnew, the profession at large has lost one of its leaders. Born in Pennsylvania, in the second decade of this century, he no sooner had ended his classical education than he began to study medicine, eager to follow in the footsteps of his father,

who had achieved success in the practice of medicine. He obtained his degree at the University of Pennsylvania, and soon his lectures on anatomy at the Philadelphia School of Anatomy attracted general attention to his abilities. In 1870 he was called to occupy the chair of operative surgery in the University of Pennsylvania, but ere this date he had, by dint of superior merit, received numerous honors, becoming surgeon to Well's Ophthalmic Hospital, to the Pennsylvania and Orthopædic Hospitals. An excellent and widely distributed private and consulting practice could not but result from such recognition of the value of his services, and his numerous and universally read publications, consisting in a host of contributions to the medical journals of the land, and in a "System of Surgery" met with wide and deserved approval at the hands of the profession.

The interest he always took in the career of younger men endeared him to the rising generation. His affability and unvarying kindness made him well-beloved to the hosts of his patients. The authority of his personal magnetism, of his deep erudition, of his consummate manual dexterity, had much to do with bringing numbers of eager students to the University with which he was connected, and with drawing crowds of professional men to the meetings at which he was expected to speak. Of ripe years, full of honors, loved by many, respected by all, his departure from the ranks of the living is widely deplored.

THE ULTIMATE RESULTS OF OPERATIONS FOR REMOVAL OF THE UTERINE APPENDAGES.

AN interesting discussion on this subject which occurred before the Medical Society of the County of Kings (*Brooklyn Medical Journal*, March, 1892), serves to emphasize the fact that, although the mortality from these operations has been greatly diminished, thanks to the perfection of the technique, the ultimate results still leave much to be desired. Dr. Coe has well said that recovery after operations for the removal of diseased uterine appendages is by no means always synonymous with restoration to health, and that in some instances sequelæ are left which are more intolerable than the original condition for the relief of which the operations are performed. Among the sequelæ mentioned by him are intra-pelvic indurations and adhesions, resulting from local peritonitis, and causing persistent pelvic pain, uterine congestion, vesical and intestinal disturbances due to adhesions. In the discussion referred to above, Dr. Pilcher stated that in cases of ablation of the uterine appendages the "pain-habit" required some time for its abolishment, but he was inclined to give a favorable prognosis as to the ultimate result. While conceding the fact that mental disturbances were among the

possible sequelæ of this operation, he had been unable to find any observations to convince him that by mere loss of the uterine appendages a woman was made especially susceptible to the development of mental alienation. As regards the influence of removal of the appendages upon the sexual appetite—a subject which has been widely discussed—he thought that in the great majority of cases the ultimate effect of these operations was to restore the sexual sense to its normal condition.

Dr. Howard Kelly, of Baltimore, who participated in the discussion, made the significant statement that the results of removing the appendages for nervous diseases—that is, diseases in which local and reflex nervous disturbances are pronounced, without any or but slight pathological changes, such as ovaralgia, so-called chronic ovaritis, etc.—are uniformly bad. He counsels us therefore to shun these operations, except in cases of dire necessity. This opinion was concurred in by Dr. Skene, whose large experience has shown the futility of trusting that diseases of the nervous system, such as epilepsy, will be relieved by removal of the ovaries, unless these organs have been for a long time diseased and functionally useless. In fact, unless they are in this diseased state, their removal is likely to be followed by nervous disturbances which render the patient's last condition worse than the first.

INTERNATIONAL CONGRESS OF GYNÆCOLOGY AND OBSTETRICS.

We are requested by Dr. F. Henrotin, 353 La Salle Ave., Chicago, American Secretary of the Congress to make the following announcement:

The Belgian Society of Gynaecology and Obstetrics, under the patronage of the Belgian Government, has taken the initiative in organizing "The International Periodical Congress of Gynaecology and Obstetrics," the first session of which will be held in Brussels, September 14th to 19th inclusive 1892. Three leading questions will be offered for discussion :

1st. Pelvic Suppurations; Referee, Dr. Paul Segond, Paris.

2d. Extra Uterine Pregnancy; Referee, Dr. A. Martin, Berlin.

3d. Placenta Praevia; Referee, Dr. Berry Hart, Edinburgh.

All communications pertaining to this Congress should be mailed direct to the American Secretary, who will promptly furnish all information. All notifications to be forwarded should be received by August 1st.

Everything points to the great success of this Congress. Though notices concerning it have been rather late in this country, already men of celebrity have promised to visit and contribute papers.

Original Articles.

A RARE CASE OF URETHRAL CALCULI IN A CHILD.

BY THOMAS H. MANLEY, M. D., NEW YORK.

Visiting Surgeon to the Harlem Hospital.

The case which I herewith report was of so rare and unique a description and, besides, presented so many puzzling and inexplicable symptoms, that I deem it well worthy of recording and of remembering.

The patient was a child four years old, of healthy parents—the third son and seventh offspring. He had had none of the exanthematous diseases of childhood up to the time he came under my observation. During the winter of 1890, it was first noticed that he had pain in urinating, and the urine voided after standing, was seen to leave a dense shiny deposit on the bottom of the vessel. For this trouble the mother gave him the spirits of nitre and other domestic remedies, but they failed to afford relief and he became steadily worse, so that by the middle of March, 1890, he passed his urine with such severe straining as to cause eversion and prolapse of the rectum. Finally, the passage of water was wholly arrested. At this time a physician was called in and emptied the bladder with the aid of a catheter. A few days later I saw the child for the first time. Being so young and timid, I could derive no information from the patient and hence had to depend on what I could learn from the parents and the objective symptoms, for knowledge as to the probable nature of his malady.

Very naturally our first suspicion was directed to the presence of vesical calculi, although there was no evidence of pain of any description in the intervals of urination—no pain in the penis, or on sudden motion of the body, as we would look for in case of stone. On the other hand, he ate and slept well and was as active as other children—free from any inconvenience until the time to urinate came, when he experienced the most excruciating agony until the urine was passed. But he was becoming steadily worse; the intervals of urination were becoming shorter and the spasmodic straining of his whole muscular system, during micturition, much more violent. Hence, when I saw him, he was beginning to show signs of gradually breaking down from great pain, loss of sleep, and the terrible dread of the agonizing ordeal which the emission of urine entailed.

On physical examination, I found the patient free from any organic disease, but in a highly excitable state. His bladder was distended high above the

pubic brim, the fundus extending nearly as high as the navel. Notwithstanding this violent straining he had no hernia in the inguinal or femoral regions. The hypogastric, inguinal and perineal areas were extremely sensitive to the slightest manipulation, so that the limits of vesical distention were only imperfectly defined by percussion or pressure. Although the little fellow resisted the introduction of the catheter with great energy, still, when he was firmly held by assistants, the bladder was readily entered and more than a pint of urine drawn off. After this he was comfortable for a few days, when he had a renewal of all his former symptoms in an aggravated form. The same means were resorted to now as at the beginning, with the same result. Now, realizing that catheterization would afford nothing more than temporary relief, I decided that some sort of radical measures must be instituted with a view of securing a permanent cure. But what should be done to accomplish this end? Had the boy a vesical or urethral calculus, a neoplastic formation along the urethral tract, or was there paralysis of the wall of the bladder and loss of expulsive power? In order to have the patient under close observation and make a more critical examination he was sent to the Harlem Hospital. After having had the patient properly prepared he was anæsthetized. A No. 5 (English) steel sound passed readily into the bladder without encountering an obstruction of any kind. The bladder at this time having been well flushed, it was cautiously but thoroughly explored with a small steel instrument in conjunction with suprapubic and rectal manipulation, but nothing was discovered to account for the obstruction.

No growth could be found, and the possibility of a paretic bladder was eliminated by the fact that when the catheter was introduced urine was expelled with considerable force through its opening. But something was wrong somewhere—about that there was no question.

It was supposed that his painful retention might be due to a spasmotic contraction or sclerotic changes in the vesical sphincter, or to an encysted calculus at the trigone. Accordingly, for the purpose of exploration, an external urethrotomy was performed—the urethra being penetrated behind the bulb just anterior to the outer lamina of the deep perineal fascia. A free opening was made through the membranous and prostatic urethra and the bladder entered. There was very little hemorrhage. Passing the index finger through the divided structures, the neck of the bladder was found to be of normal consistence. The vesical mucous surface was of a smooth, even outline, and nothing whatever was encountered suggestive of encapsulated calculi. It will be observed that our

operation was negative in result, as no morbid condition was met with.

The child experienced great relief while the urine dribbled through the perineal opening, or while the catheter remained in the bladder. When the perineal incision was quite closed he was taken home. He seemed to derive some slight relief for about a month after the operation, when there was a relapse of all the former symptoms with marked constitutional disturbance, a rapid pulse, high temperature and loss of appetite.

The poor sufferer now had a daily prolapse of the rectum in straining, and the tissues near the left crus of the penis over the corpus cavernosum were indurated and highly inflamed. The urethra was so sensitive that no catheter could be retained, so that the urine had to be drawn off at intervals. After a few days the abscess burst and extravasated urine freely escaped. From this time there was complete relief from pain, the urine all passing off through the fistulous opening.

Chagrined and baffled, I left things alone for a time; and as I was about to leave the country for the summer, no further operative measures were undertaken till after my return in October.

I had in the meantime diligently scanned the literature of urethral and vesical surgery, and described the case to many eminent operators whom I met abroad, but I obtained no satisfactory information. Finally I decided to cut down over the fistulous opening and explore anteriorly, for it was evident that there was no sort of impediment posterior to the triangular ligament. But yet, the poser was, how a sound or catheter could pass so readily into the bladder, and still no fluid could traverse the penile urethra without difficulty?

He was again admitted to the hospital. After ether narcosis, a steel sound was passed through the urethra, and then a small silver probe was introduced into the fistulous opening, which came in immediate contact with it. Now, cautiously cutting down on the sound anterior to the posterior wall of the sinus, I was surprised to find the cutting edge of the scalpel come in contact with a hard, stony substance. Widely separating the incision, a white, pearly surface came into view, which proved to be a rather flattened spheroidal calculus, which readily rolled out when displaced by the probe. The removal of this was followed by two others of a similar size and shape. A catheter was now passed the entire length of the urethra into the bladder, and by a flap-splitting process the incision was closed after the annular callous rim about the sinus was dissected away.

At last the problem was solved and the impediment was removed. The parts failed to unite by

primary union; but, after a few weeks granulations sprung up and the opening solidly cicatrized—our little patient being finally completely cured of his infirmity.

In reviewing this singular case, one might say that a grave oversight had been committed at the beginning, in not accurately locating these concretions. But, as we have seen, they completely eluded the searcher, and besides, though they effectually prevented the free escape of urine, they offered no impediment to the passage of instruments.

My primary incision, while doing the perineal urethrotomy, was scarcely a line posterior to where these bodies were lodged. This explains why the operation was a failure, and why the injured parts were left in a condition favorable to the extravasation, which subsequently followed. Thomas Bryant, in his admirable treatise on surgery, says that urethral calculi commonly cause impediment to urination, or even total obstruction in young children of the male sex. "So that when we meet with impediment to the passage of urine in young males, we will find it attributable either to phymosis, paraphymosis, atresia of the urethra, a string around the penis, or a stone in the urethra; in young and middle-aged men to gonorrhoea and stricture; and in old men to prostatic enlargement."

A study of the pathology and precise mechanism of the impediment in this case is simple. Urinary lithiasis is very uncommon in New York, as our water supply is derived mainly from the drainage of surface rain fall, and hence, unlike well-water, or that of a river rich in alluvial deposits, is comparatively free from an excess of the lime salts. There was no history of a previous cystitis in this child, or of any hereditary predisposition.

The calculi removed weighed, in their dry state—one, nine grains; one, eight and one-half; and one, seven grains. It appears that, owing to the greater resilience and elasticity of the vesical orifice of the child, a calculus will engage and pass through it with great ease, while a stone will seldom enter the firmer, more sensitive outlet of the adult; but when it does the perineal muscles, owing to their considerable contractile power, commonly force concretions through the urethra, without engaging or giving rise to serious trouble.

It is very probable, in my case, that the calculi left the bladder consecutively. The first one becoming impacted blocked the second, which, coming down, was arrested, and then by pressure and ulceration imbedded itself in the same plane, but a little above the first. The third, owing to the greatly increased obstruction from in front and pressure from behind, soon forced itself into the peri-urethral tissues at the

same site as the others. It would seem almost inconceivable how those three large, hard concretions could so solidly imbed themselves without causing a tear in the urethral walls and subsequent urinary extravasation. The three calculi were so lodged in the walls of the urethra, that when a volume of fluid was thrown against them, such as the stream of urine, the walls were raised like so many cusps from a flaccid, collapsed state, and, like a valve, in proportion to the pressure became the more solidly approximated. The sound passing in from before simply pressed them aside and consequently was not impeded. But, had the urethra been explored outward as well as in the direction of the bladder, this stone-wall must have been discovered when the first exploratory urethral incision was made. Herein lay the fatal oversight. I had never seen the urethra explored in both directions after the urethral incision; nor have I been able to learn that any of our great authors ever advised it.

There are very many intricate problems and confusing conditions which the books throw no light upon, and where one is compelled to fall back on his own resources or on first principles. If we possess good judgment, a sound and practical knowledge of anatomy, chemistry, physics and physiology, in the vast majority of the most intricate cases, by the aid of Nature and sound sense, difficulties will often disappear before us. We must, nevertheless, be cautious that in endeavoring to relieve our patient we may commit no error. Particularly desirable is this with the fresh crop of graduates who may feel that, since they can cut and slash without the infliction of pain or contamination of the wound, they need scarcely stop at anything. No doubt dexterity and rapidity are desirable qualifications, but these, without keen judgment and clear discerning powers in the surgeon, are worthless.

HERNIA IN INFANCY AND ITS CORRECT TREATMENT.

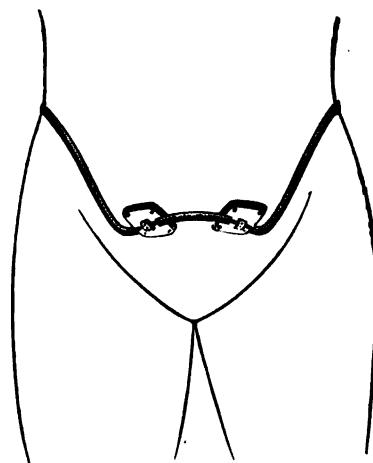
By ALEXANDER DALLAS, M.D., NEW YORK.
Consulting Surgeon to the Bayonne Hospital.

PART II.

In assuming the care of a case of hernia in infancy, two questions at once present themselves: 1st, when shall treatment commence; 2d, what form of truss should be employed?

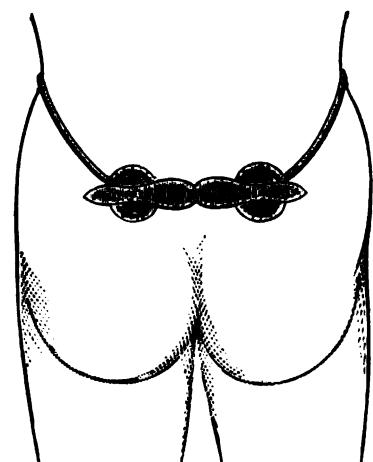
The answer to the first question is perfectly clear. As soon as the hernia shows itself, treatment should at once commence. The idea that the child will outgrow its disability, or that it is too young to bear treatment is utterly erroneous, and much harm is often caused by the delay.

In regard to the second question—what form of appliance is best—opinions differ. In the treatment of all forms of inguinal hernia in my own patients, I have, for some time, been using a truss devised by myself and shown in the accompanying cuts; and the results have been most gratifying and satisfactory both to the patients and myself.



FRONT VIEW.

An examination of the drawing will at once show how much it differs from the trusses now in use. The belt is made of light material and is covered with leather or hard rubber. (Soft rubber tubing should never be used for this purpose). It rests firmly upon the crest of the ilium, an immovable support, and is not affected by the movements of the body or contractions of the muscles. As a result, there is no interference with movement, no incessant motion of



BACK VIEW.

the pad, no excoriations to heal up. The belt passes down the sides of the abdomen, closely hugging the abdominal walls, thus breaking the lateral recoil of the intestines which causes the protrusion, and acting as an auxiliary to the pad. The pad itself, of hard rubber, is small, somewhat diamond shaped, its lower

outer angle cut off to fit into the fold of the groin, its surface slightly concave to adapt itself to the convex abdominal walls. Running from the centre of the face of the pad to its lower edge is a gradually deepening groove, which prevents compression of the vas deferens, and spermatic vessels and nerves. The pressure exercised by this truss, being applied from above downward, is slight, comfortably borne and *directly over*, not "near," the internal ring; not because "the parts back of the pad are soft and yielding, and it is worn with comfort," but because that is the only place where pressure should be applied and retained. Another important feature in this truss is its ease of application. Once properly adjusted, it can be taken off by the patient and reapplied, without fear of displacement—a fact which cannot be said of any other truss with which I am acquainted. As all spring trusses should be removed at bedtime, the importance of this will be readily appreciated.

In umbilical hernia, a flat disk, kept in position by a simple binder or fastened with plaster, is usually sufficient to effect a cure in the early months of life. Later, a flat pad with a spring may be necessary, or a rubber ring with diaphragm is an excellent appliance. The use of a ball or the conical pad usually employed is a serious mistake, as it presses into and dilates the ring, aggravating the very object for the cure of which it is applied.

In ventral hernia, the same principles of treatment should be employed, varying the appliances with the varying condition and location of the protrusion.

Now, having applied a truss, most physicians seem to think that their work is done. On the contrary, the real treatment of the case has just commenced if a cure is desired. The patient should be kept under the physician's supervision and should be carefully examined at regular intervals, to assure himself of the perfect retention of the hernia, as well as to provide for the rapid growth of the child. Perfect cleanliness should be preserved, and all causes that operate to prevent nature in her efforts at repair should be removed. The digestion should be carefully looked after. Constipation should be prevented. Vomiting from overfeeding or improper food should be checked. Straining from diarrhoea or from a constricted or adherent prepuce, as well as persistent cough from any cause, should be removed. The persistence of any of these causes may hinder, or even completely destroy, all chances of cure directed solely to the hernial protrusion. At the same time, efforts should be made to develop and strengthen the weakened muscles by massage, electricity, and gymnastic exercises of various kinds. There is one point in the treatment of these cases to which I wish to call special attention. *No*

spring trusses should ever be worn in bed. In the large majority of cases, it is quite unnecessary, and in all cases, it is harmful. When necessary, as in the case of infants, the truss should be removed at bedtime, and replaced by a "hank" truss or a home made bandage. It is in these night cases that the lately much vaunted "hank" truss will find its proper field of usefulness.

The length of time during which truss pressure should be kept up will vary in different cases, but should not be less than one year at least, counting from the time of last protrusion. After six months, the pressure should be gradually lessened until, at the end of the year, it is merely nominal, while the efforts made to strengthen the parts should, at the same time, be increased.

Of the complications mentioned in the earlier part of this paper, there are two which demand special attention, viz : congenital hydrocele and non-descent of the testicle.

Congenital hydrocele or "windy rupture," is present in the majority of cases of congenital hernia. It is due, I believe, in many cases to improper truss pressure, for it usually does not appear until some time after treatment has begun. Care must be taken in these cases not to confound it with a return of the hernia. If the quantity of fluid should become so large as to inconvenience the child, or if it persist for any length of time, the cure can be accelerated by the use of the Heaton method of injecting a few drops of an irritant solution in the canal. This will excite sufficient adhesive inflammation to retain the fluid in the abdominal cavity, while truss pressure is kept up to prevent protrusion of the gut.

Non-descent of the testicle is very frequently overlooked. It demands careful attention and judicious management. When the testicle is in the canal, a concave pad should be applied over it, not only to prevent irritative pressure, but also to encourage its passage outwards to the external ring. As soon as it emerges from the canal, a pad should be applied over the internal ring.

In the extremely rare cases of infantile hernia, where properly applied mechanical treatment fails to effect a cure, then surgical measures have to be resorted to. In these cases, almost any form of operation will meet with success, and, if performed with proper antiseptic precautions, the risk is slight. The McEwen operation as modified by Bennett, is unquestionably the best yet advanced, but each operator has his own method of attempting to effect a cure. For myself, I prefer a transverse incision through the skin, and after reducing and fastening the sac as high up as possible, so as to bring a fresh portion of the peritoneum over the opening, I am

more anxious to approximate the external portion of the anterior and posterior lips of the internal ring, than in drawing together the pillars of the ring which has little effect in preventing, of itself, a recurrence of the hernia. For it must be remembered that the internal ring is not a ring at all, but a "slit" or separation between different layers of tissue; and, while we cannot close up the inner portion of this "slit" on account of the vessels passing through it, by removing the fossa above the internal ring, which invites the descent of the bowels, and by closing up the external half of the "slit" through which the protrusion occurs, we will succeed better than by any other method. Here, as elsewhere, the more closely we imitate nature, the more successful our efforts will be.

65 West 36th Street.

CHRONIC UTERINE CATARRH AND ENDOMETRITIS.

By H. D. CHAMPLIN, A.B., M.D., Cleveland, O.

By the term endometritis, we understand a catarrhal inflammation of the lining membrane of the interior of the womb. I propose in this paper to give, in as practical manner as possible, the method of treatment I employ with its resultant effects. A lady patient comes to my office and complains of an annoying leucorrhœa. On physical examination by means of the speculum, I find a patulous, or a swollen cervix, with an opening which will easily admit the uterine probe, and showing the canal somewhat lengthened (say three, or three and a half inches); and upon withdrawing the sound there is a discharge of blood, or its beak shows blood upon it. I know I have a case of endometritis to deal with and probably a complication of subinvolution. As a preliminary to treatment, I commence by depleting the cervix and indirectly the whole uterus, by applying, locally, glycerine (the purest I can buy). For this purpose any good speculum will serve; a piece of marine lint is then taken and a piece of string tied around it in the center, then it is saturated with the glycerine and introduced through the speculum against the cervix. The speculum is then removed and the lint left in for twenty-four hours, then the patient may remove it, and immediately after she takes a vaginal injection of hot water (100°F).

And now a word as to these injections of hot water. To get a good effect, a gallon or more of water must be used. The woman should be instructed to procure a fountain syringe (capacity of one gallon); the height at which it is placed should be such as to give the water only a moderate force. In taking the injections she must lie on a flat surface in the dorsal

or Sims' position. The injection should be continued for at least fifteen or thirty minutes, depending upon the degree of comfort experienced by the patient, and last, but by no means least, under no circumstances is the patient to arise from the recumbent position for one hour, at the very lowest, and better still, two hours after using the syringe. After the injection a fresh tampon saturated with the glycerine is again applied and this simple treatment is continued for four or six days. If the leucorrhœa is slight and the catarrh confined to the lower segment of the uterus, the improvement from this simple and harmless treatment will be a source of wonder and delight to you. The glycerine acts as a depletant, empties the capillaries, provokes a serous secretion, in other words, sets up a capillary osmosis.

After using the glycerine and hot water injections, as above directed, for a few days, local medication must be employed within the cavity of the womb. Place your patient upon her back or in Sims' position, and introduce the speculum and bring the cervix into the field of view. Now introduce the uterine probe with the greatest gentleness and skill and without causing any pain, and measure the cavity of the uterus. Have ready half a dozen small sized probes (known as applicators), made of rubber or alumina, and carefully wind around their extremities for two inches back, some fine borated or absorbent cotton. Introduce one of these applicators as high as the fundus and gently sweep it around so as to swab and clean out the cavity; now take a fresh one and saturate it with iodized phenol and introduce it as far as the fundus, withdraw it, and repeat the same procedure with a second probe. After this operation is completed, use the glycerine as above directed; after a few applications you will find a decided improvement; the opening through the os and cervix will be materially lessened and contracted, and if a condition of subinvolution be present, it will also be greatly improved.

In these cases you may often find abrasions, erosions, and menorrhagia as complications. They are very stubborn, and require the use of the sharp curette (always under strict antiseptic precautions), the patient being instructed to remain in bed for at least four days after curetttement. Special attention must be given to sustaining and improving the general health of the patient, by good nutritious diet, fresh air, systematic exercise, and avoidance of all circumstances tending to harass the mind or to depress the spirits. Change of air and scene are important factors whenever practicable. The nervous and sanguineous systems are fostered by these measures. Should tonics be required there are none better than the mineral acids, quinine, nux vomica, and

iron in some form. Rich and highly spiced food, violent and intemperate exercise, habits of luxury and indolence, keeping of late hours, and excessive sexual intercourse must be positively prohibited. Absolutely refuse to treat a case of this kind unless the patient will support all the clothing from the shoulders; insist upon this at the very beginning of your treatment, and see from time to time that it is carried out. (It is necessary that you do so.) Explain to your patient the dangers of getting out of bed without protecting the feet. Remedies which have served me well in these cases are; belladonna, hydrastis, calcium sulphide, caulophyllum, actæ racemosa, ergot, gelsemuinum and thuja occidentalis.

The treatment and instructions given above, if faithfully followed out for a period of from three to six months in every case, will prove curative, unless the trouble is grafted upon a syphilitic or tuberculous subject. Other applications which may be found of great utility in the local treatment of these cases are tincture of iodine (compound), iodoform, chromic acid, balsam of Peru, pinus canadensis, and a solution of bromine (12 drops to one ounce of alcohol). I will cite two cases out of many to confirm all that I have claimed above:

CASE I.—Mrs. B., aged 42, married fifteen years, desired treatment for an annoying leucorrhœa of some six months standing. Physical examination revealed a patulous os, swollen cervix, and upon introducing the sound and withdrawing it a discharge of blood took place. The diagnosis was endometritis with complicating subinvolution. I commenced treatment by depleting the cervix, using tampons of marine lint, saturated with glycerine, and placing them close up against it. On the following night just before retiring the tampon was removed, and an enema of hot water (102°) was given in the dorsal position for one half hour, then another tampon soaked in glycerine was inserted and placed against the cervix. This treatment was continued for six days. On the seventh day she came to my office, when I cleaned out the cavity of the uterus and swabbed it thoroughly with iodized phenol; this was followed by the glycerine tampon upon which I dropped a small quantity of belladonna (about 10 drops); this tampon was allowed to remain (as did all subsequent ones) for two days and was removed at night followed by a hot enema and absolute rest.

For one month she came to my office twice a week for treatment, after that once a week for two months; in the mean time having instructed her how to apply the glycerine tampons and insisting that she take an enema and apply a tampon herself when mine were removed. She retired every night at ten o'clock; her food was plain but nutritious (no pastries, etc.); and marital intercourse was limited to once a month.

The hardest fight I had with this woman was in regard to supporting her clothing from her shoulders, but she now tells me "she wonders how she ever got along without her shoulder and garter straps." The only remedies I used were belladonna and hydrastis; as a tonic I gave her quinine, two grains three times daily. In six months she had entirely recovered.

CASE II.—Mrs. U., aged 29, married three years, presented symptoms much the same as case No. 1, except that as a complication I had menorrhagia to contend with. After thorough antiseptic precautions, I (at her house) curetted the uterus, using the sharp curette and removing the diseased masses of mucous membrane. I then made an application of the iodized phenol and inserted a tampon saturated with glycerine. The after treatment in every respect was the same as in case No. 1. The remedies used were calcium sulphide and thuja occidentalis, as there seemed to be a tendency to glandular enlargements and to raise a "crop" of warts on the slightest provocation. Her improvement was rapid from the first and in three months I dismissed her a well woman. She is still in good health, as far as I can learn, some three years since her treatment.

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The Treatment of Complicated Retroflexions of the Uterus.—Dr. O. Küstner formulates the following rules for the treatment of these cases: If reposition cannot be accomplished by the ordinary manipulations the patient should be anaesthetized to confirm the diagnosis. If adhesions are found they should be torn according to Schultze's method, the uterus restored to its normal position, and a proper pessary inserted. The patient should remain in bed until symptoms of reaction are no longer present. Thure-Brandt's method of separating the adhesions and replacing the uterus gives excellent results, but requires too much time. For this reason Küstner prefers Schultze's method, or laparotomy. If the latter operation is resorted to the incision should be made low down near the symphysis pubis, the uterus is then drawn up by forceps, so as make tense the adhesions which are divided with the Pacquelin. After the uterus has been freed from adhesions the question of ventro-fixation comes up. If the patient is young, and the tubes and ovaries healthy, the uterus should not be fixed, but a Thomas' pessary should be applied. On the other hand, if the patient is at or near the menopause, the uterus should be attached to the abdominal wall by two or three silk-worm gut sutures; and if the tubes and ovaries are seriously diseased they should be removed.—*Sammel. Klin. Vortr.*, No. 9.—*Wien. Med. Presse*, No. 10, 1892.

Clinical Department.

CHRONIC ENDOMETRITIS—UTERINE ADHESIONS.

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GENTLEMEN:—The patient I show to you first, this morning, presents a well marked endometritis, with catarrh of the cervix. The symptoms that she has been suffering from, and which are due to this combination of troubles, have been profuse and painful menstruation, a very thick, disagreeable discharge from the cervix, and pain on the left side about the ovarian region. Added to these conditions, she has been the subject of not a slight amount of reflex nervous trouble. The reflex neurosis which this patient complains of has been more particularly confined to the throat rather than to any other part of body, and consists in difficulty in swallowing.

The line of treatment I adopted in this case for the cure of the dysmenorrhoea and the catarrhal condition of the cervix, consisted in drainage, than which I know of nothing that will accomplish more good in a short time. The first thing to do is to thoroughly dilate the cervical canal, and this can only be done under an anaesthetic and at the home of the patient, or in a hospital. When the canal has been thoroughly dilated, remove from the uterine cavity any enlarged glands that may be found there, and then thoroughly curette the whole utero-cervical canal to do away with the catarrhal inflammation that has existed there for a long time. Under this course of treatment you will find the reflex symptoms gradually disappear, the secretion which comes from the uterine canal will gradually assume a more normal character, and the menstruation will become less profuse. That is the way I have treated this patient before us, and you can now see the result for yourself.

The after treatment amounts to very little in these cases. After thoroughly curetting the uterus, you must secure perfect drainage, and that is best done by packing the uterus with gauze, or by inserting a self-retaining intra-uterine stem, which the patient should be permitted to wear for some months after the operation. This latter method is the better of the two plans of treatment, and the one I have employed in this case. It is the more cleanly and the more efficient of the two methods. This patient has been wearing a hard rubber stem for two weeks and her condition is very much improved.

Added to the catarrhal condition I have just spoken of, in connection with this case, this patient has also

another complication which I have failed to mention, and that is a prolapsed left ovary, which it is not very difficult to find, and which is slightly enlarged. I have not spoken particularly about this condition in this case, because, as a general thing, you will find after carrying out the treatment I have spoken of in these cases, by curetting and drainage, the increased circulation which takes place around the part and the increased drainage will ultimately result in a disappearance of the enlargement of the ovary. Of course, we come across cases, once in a while, where we have exhausted all the ordinary means at our disposal for the cure of this condition, viz; curetting, drainage, boroglycerite tampons, etc., without producing any improvement. Under such circumstances, a resort to laparotomy becomes an absolute necessity to cure the disease of the ovary, or to relieve the extreme nervous symptoms from which the patient suffers.

Some of you may remember the cases we had here a few weeks ago, in which I detailed, at some length, the method I usually followed out in inserting a pessary in the vagina to hold the uterus in place. I succeeded very well in this case. I told you at the time that you did not hear much of the use of the pessary now a days, and some gynecologists even claim that they never employ it in their practice. There is, however, a certain class of cases you cannot properly treat without a pessary, although it is a well recognized fact among gynecologists that the instrument is not spoken of as frequently, or with the same enthusiasm, as it was some twenty years ago. It is, however, an aid to the successful treatment of some patients, so that it cannot be entirely ignored. Occasionally you come across a case like the one before us, where we have a girl who is obliged to work in a factory and has not time to have an operation performed in a hospital, or the means to have the operation performed at her home. In this particular class of cases of malposition of the uterus we have to try and adapt one of the mechanical means of support that will hold the organ up, and relieve the subjective symptoms the patient complains of.

It is an extremely difficult matter to fit an appliance in some cases, and then again you will come across cases in which you fail utterly. A well adjusted pessary, that is, a pessary adjusted by a man who thoroughly understands how to fit an instrument, can be worn with the greatest comfort to the patient.

The patient before us is a young woman thirty-four years of age, who has been working in a carpet factory in this city for a number of years past. When she first came to this clinic I made an examination of her uterus and found it bound down by firm bands of adhesions posteriorly. I could not, consequently,

elevate the organ for more than a short distance in that direction. She was sent to the hospital and under an anaesthetic I succeeded in breaking up the adhesions by bimanual manipulation, or what is known as the Schultze method. This procedure is an extremely simple one, but can only be accomplished under anaesthesia. The uterus is first lifted by the uterine elevator until the patient experiences extreme pain, and then under the use of an anaesthetic, it is lifted up further. With one finger on the abdomen and the other in the vagina or rectum, and by making pressure behind the posterior wall of the uterus, you gradually work these adhesions away by a sawing motion of the uterus through the abdominal wall. The adhesions will become loosened one after the other and the uterus will suddenly be found to have gone forward. This was the method employed in this case, and the adhesions have all been completely broken up. The uterus is now freely and perfectly movable within the pelvic cavity.

The operation I have here alluded to is not a serious one, nor is it attended with any disagreeable after symptoms. Of course, it is not such a one as you can do in your office, for that would be simply inviting inflammation and not taking the precautions a surgical procedure of this kind demands. I always do it at a hospital or at the home of the patient, and put her to bed immediately after the operation. At the end of three days I proceed to elevate the uterus by means of the uterine elevator without the induction of anaesthesia, and in that way I educate the uterus, so to speak, into assuming its normal position in the pelvic cavity. The next day you can repeat this procedure, and you will find that all the tenderness which was present in the posterior wall of the uterus will gradually pass away; when all the sensitiveness has gone you can then proceed to fit the pessary, as you have seen me do in this case.

I wish you to remember one thing in particular when applying a pessary, and that is, that there is not one instrument which will fit any two persons. Every instrument must be moulded to fit the patient for whom it is intended, and if you follow out this advice you will experience no trouble in the use of a pessary. It is a fact well proven to my mind, that it is not so much the use of a pessary as the abuse of it that causes trouble. I would recommend to you a block tin ring for the purpose of forming a pessary, as it can be altered into any desired shape you choose. Having got it to the desired shape, you introduce it into the vagina, and if the patient complains of no pain from its use, let her go home with the caution that she is to take it out the very moment it causes her the slightest discomfort. This discomfort, which is due to pressure of the instrument, may be provoca-

tive of more inflammation in a few hours than you could remedy in as many months. This block tin instrument is, you must bear in mind, but a temporary appliance, and I do not recommend it to you as a permanent one by any means; but after the patient has worn it for three or four weeks and you are satisfied you have the exact fit, then remove it and apply a hard rubber pessary like the model of block tin, which can be furnished you by the instrument maker. Then you may let the patient wear the rubber one permanently.

OSTEOMYELITIS OF THE FEMUR—ENCYSTED HYDROCELE OF THE OORD—GONORRHEAL RHEUMATISM.

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GENTLEMEN:—The patient whom I bring before you to-day has been suffering from osteomyelitis of the thigh bone, and is the young man upon whom I performed an osteotomy a week ago to-day. After the operation, when most of you had left the room, he manifested quite serious symptoms of collapse. His pulse was in a very bad condition before the operation, and I therefore completed it as rapidly as possible. There was considerable hemorrhage from the wound, and this came not so much from the soft parts as from the bone.

This operation may serve as a very fair illustration of the way in which all surgical procedures were performed before the invention of Esmarch's bandage. The fact that in the vicinity of the roots of the extremities, that is, in the vicinity of the hip and shoulder joints, an Esmarch's bandage cannot be applied, renders operations here more serious than when they are performed lower down; and, of course, considerable rapidity of execution has to be employed. The surgeon who operates rapidly, and at the same time deliberately, will obtain these results in the best manner. I would state to you, though the statement may seem paradoxical, that in order to perform a more rapid operation, it is necessary to make a very liberal incision and expose the bone rapidly. The bone is then before your eyes and you do not lose time in preliminaries, during which the patient suffers much loss of blood. The prolongation of the incision one or two inches through the soft parts will not increase to any extent the hemorrhage, for it is the oozing from the cancellous tissue of the bone, which it is difficult to arrest, that causes the loss of blood. The quicker you are in reaching the seat of disease the less blood will the patient lose, and the more satisfactory will be the ultimate result.

Let me tell you that not only in this particular field of surgery, but in every department in which major surgical operations are performed, success depends, to a much greater extent than many believe to be the case, upon the quantity of blood saved by the surgeon during the various steps of the operative procedure. Take, for instance, the subject of laparotomy—a subject which is discussed by many persons in this country and abroad, who never received any surgical training—take this subject, and you will find that the disastrous results that follow this operation are not so much due to a disregard of antiseptic precautions, which I do not belittle by any means, as to disregard the principle of not sacrificing one drop of blood more than is necessary. When you see a man explore the abdominal cavity, through a minute aperture and withdraw a mass containing pus, sometimes very septic pus—a mass which is surrounded and intimately glued and attached to the organs in its vicinity, the bladder, uterus, coils of intestine, etc.—you cannot be astonished that disaster should follow such a procedure. He is working in the dark, he does not see any vessel he has ruptured, and he is neglecting one of the great cardinal principles of operative surgery, by not cutting under the guidance of the eye. I have seen surgeons explore the abdominal cavity, rupturing vessels and occasionally even tearing into the intestine. You are taking great risks with your patient when you are violating this all important rule of operative surgery, and especially is this true in cases where there is a large quantity of blood associated with contaminating material in the abdominal cavity, both on account of the danger of hemorrhage and septic trouble.

The rational procedure, then, is to open up to view the field of operation, and when you meet adhesions that are too tough to be broken up by the tip of the fingers, put double ligatures around them and divide them, securing each vessel before you cut. By this method, you will have a clean field to work in, will have no secondary hemorrhage, and avoid the necessity of inserting a drainage tube in the abdomen. Very frequently the tube is inserted in the wound on account of the fear of secondary hemorrhage, because it has been observed so often after these operations. A small artery is torn, a clot forms in its orifice, the surgeon sponges the bottom of the pelvis and fails to bring up blood. The hemorrhage has been only delayed; it is apparently at a standstill. The patient is placed in bed, and the pulse under the influence of the returning reaction begins to become stronger. The vital processes are augmented, the various effects of the operation, such as shock, etc., are passing away, and as the action of the heart increases, the haemostatic influence of the coagulated blood dis-

pears, the plug is displaced and a hemorrhage follows.

The very thing we all wish for, to see the patient react well after the operation, is what brings about the disastrous result. Now, under such circumstances, what is the ordinary practice. The incision was a small one; does the surgeon open up the field of operation and tie a ligature around the bleeding vessel? I ask you this as a practical man. Is that what the surgeon usually does? No. He is again afraid of enlarging the incision and hunting for the bleeding vessel. Styptics are used, compression is employed, the belly is washed out with large quantities of fluid. Occasionally, these measures succeed, and in spite of his surgery the patient may recover.

These secondary hemorrhages, are exceedingly dangerous. They generally occur in patients whose vitality is lowered from long continued illness; and unless you are a determined man and adopt the practice of hunting up the bleeding vessels, your patient may die as a result of the direct loss of blood, or the complications arising therefrom. I have mentioned this fact to you in order to illustrate the great importance attached to this neglect. This practice of making a small incision in abdominal operations is based upon the superstition which had its origin in England, and has been transplanted to this country, that the larger the incision the greater the mortality. Now, many who examine this aphorism would accept at once the view that the mortality is in direct proportion to the size of the incision. That this is a fallacy I will prove to you. They say the larger the incision the greater the mortality, such being accepted as true, what follows? As a natural consequence it means that you should make your incision as small as possible, and thereby keep the mortality of your patients down to a minimum. Though I admit the truth of this statement, yet I deny the truth of the explanation. In what class of cases do you make a large incision? You require a large incision in cases of large, solid tumor, with many adhesions—in other words, in all difficult cases. Therefore the mortality is greater in these cases, not because the incision is a very large one, but on account of their severity. I say once more to you, if you make an incision sufficiently large to see the vessels, you will be able to tie them; if it is too small, you will tear them before you see them and cause trouble. Work, therefore, under the guidance of the eye, and save as much blood as possible. Expose the intestines freely; and by adhering to this principle you will run no danger of secondary hemorrhages, and the mortality of your patients will be diminished.

This is my experience, and this experience is not based on one class of abdominal cases. It involves all forms of operations which come under the care of

the general surgeon, such as gunshot wounds, diseases of the intestines, gall ducts, gall bladder, pancreas, liver, etc. I say here with all diffidence that our experience is a wider one, and our judgment deserves more respect and is of greater value than that of those surgeons whose operative work is limited to a single organ in the abdominal cavity.

Now, to return to the case before us on which I operated, as I have already stated. The portion of the wound that was sutured has united, the discharge is moderate in amount, and the cavity looks clean, with granulations springing up all over it. The temperature was 102° F. the day following the operation, but ever since that time it has been normal. This will, however, be a rather tedious case; for we chiselled away a very large portion of the thigh corresponding to the trochanter major, and the cavity will have to gradually fill up with granulations.

The next patient is an infant who has a tumor in close relation with the spermatic cord. I can get no impulse when the patient cries and I cannot trace this well defined, smooth tumor into the abdominal cavity. The testicles are below in the scrotum and normal; and, hence, I am inclined to assume we have to deal here with an encysted hydrocele of the cord. I will ask the mother to bring the child here again, for there is no hurry about the case, and before I give an opinion I should like to see the patient once more.

I will tell you why I do this. It happened to me in my dispensary practice, many years ago, but I have not forgotten it yet, that a patient with symptoms similar to this one was brought to me, and I diagnosed hydrocele of the cord. There was fluctuation and translucency and I plunged the needle into the tumor, withdrawing some serum. There was apparently still more serum in the sac; I introduced the needle a second time further in another direction, and this time gas escaped. I saw it enter the barrel of my syringe and thought that the instrument was leaking. In order to quiet my apprehensions I told the parents of the child to take him home and come back with him the next day, which they did. There was a very hard red swelling at the site of the small smooth, soft swelling of the previous day. His temperature was 105° F., he had vomited everything, and had had no stools since. The symptoms of an acute strangulation of a hernia were present.

The child was at once anaesthetized, after having secured the consent of the parents, and when I cut down upon the swelling, I found a coil of intestines which had been pierced by my needle, contained in a sac, the walls of which were in a state of inflammation. The intestine had become adherent to the

walls of the sac in several places, and the sac contained a mixture of pus and faeces. In trying to force a diagnosis I had done an injury to the intestine and caused a localized peritonitis in the sac, and, of course, strangulation due to the inflammation, etc.

There was some difficulty encountered in finding the site of the puncture, but it was discovered finally on careful investigation, and was no longer discharging. I released the strangulation, cleansed the intestine and carefully replaced it in the abdominal cavity, doing a radical operation for the cure of the hernia. The patient made a rapid and uninterrupted recovery.

This is an experience that we all encounter occasionally, and it ought to warn us against too great haste in cases in which there is no necessity for haste. If I had any doubts about the diagnosis, and if there were symptoms present which made it imperative for me to decide what was the cause of the trouble, I would much rather chloroform the child at the start, cut down and see what there is, than plunge a needle into the swelling. I beg of you to make a note of this and you will never regret it.

We have here, as our third and last patient, a young woman who was pregnant and was confined in due time. She has probably had a leucorrhœa, a very common thing during pregnancy, and still has a vaginal discharge. She has had no urethritis, no frequency of urination, but a week or so after confinement a violent inflammation of the wrist joint set in.

Now, as you look at this hand you see a dense œdema, a glossiness of the integument, and you notice great functional disability, apparently due to lack of flexibility of the joint, and lack of mobility of the flexor and extensor tendons due to the dense infiltration of all the tissues surrounding the joint. There is no pain, but we have the history of previous vaginal suppuration and of rheumatism which attacked not only this but other joints of the body. What is the trouble here? Is this an ordinary case of rheumatism or is it something else? It is very difficult to state now what it is, but it was probably one of those forms of rheumatism which are classed erroneously under the head of gonorrhœal rheumatism. I rarely use that phrase myself to designate this affection, and advise you not to employ it, because it pronounces a severe and frequently unjust judgment on many patients who are afflicted with this form of rheumatism. Patients suffer from "gonorrhœal" rheumatism who never had gonorrhœa. In fact, anyone suffering from suppuration anywhere (a perfectly harmless and unobjectionable urethritis in men or women due to catheterism, which is a very common thing as you know), is apt to be

attacked by this condition. Of course, gonorrhœa does produce the same affection and the method of infection is the same. It is not the gonorrhœal poison that does the mischief, but the ordinary pus organisms that are always found in gonorrhœa. If it were otherwise we would not see a typical gonorrhœal rheumatism develop without the presence of gonococci. Urethral suppuration is characterized eminently by a tendency to absorption of the products and is prone by metastasis to settle down in the wrist, knee, and elbow joint. Therefore, it is better to call such a form of rheumatism by the name of urethral rheumatism; and by so doing you will not be passing a harsh judgement on patients who do not really deserve the implication suggested by the term gonorrhœal rheumatism. I never employ that term unless I find gonorrhœa present, and then you are perfectly right in using it.

The treatment of ordinary acute articular rheumatism, and the treatment of gonorrhœal rheumatism are different. The latter form of rheumatism is more virulent, gives the patient a great deal more pain, and is more tedious. In this case here we have no acute symptoms to deal with, but we have the chronic form and a very troublesome stage of the malady. I have examined the mobility of the wrist-joint, and find passive mobility possible and not painful. I find that the joint is not hot, nor is the temperature of the body raised.

We can restore suppleness to the parts after we have found out the cause of the trouble, and what is the cause? Inflammatory deposits outside the joints and synovial sheaths, in the muscles, and a general atrophy of the muscles which preside over the various movements of the wrist and hand. We shall try to remove as many of these deposits as possible, and to that end will have to employ means to bring about absorption of the inflammatory effusions within and around the various tissues of the joint. To increase the force of the atrophied muscles, we shall have to stimulate the local circulation of the parts by hot or cold douches. You know heat or cold will cause the tissues to flush up, causing a local hyperæmia. It is just in such a case as this that massage should be employed, and I have no doubt it will accomplish a perfect cure.

Hence, by exposing the patient's hands to the action of hot water for fifteen minutes, and by employing methodical and careful massage, including massage of the fingers, hands, wrist and forearm, following this up by faradic stimulation and active movements of the patient, we shall do away with the two chief causes of her present disability, inflammatory deposits and atrophy of the muscles.

Abstracts and Selections.

WHAT IS A "FELON?"

By HERBERT L. BURRELL, M.D.,

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I feel sure that most practitioners distinguish various affections of the fingers; and in this paper I shall place before you a classification that I have used in my work, which has enabled me to meet these cases with a greater sense of accuracy. It is an anatomical classification, and is as follows:

- (1) Dermatitis.
- (2) Paronychia.
- (3) Cellulitis of the finger.
- (4) Suppurative thecitis.
- (5) Periosteitis, or osteitis of the phalanges.

I believe that it will be granted by all that it will be of value to differentiate these several affections, and, as a matter of fact, I have found it possible to do so in my clinical work.

I. DERMATITIS.

In a dermatitis we have a clinical history somewhat as follows: Usually the starting-point is some slight abrasion of the cuticle covering the end of the finger, and from this point there starts a reddened area with slight elevation of the skin, with a stinging, smarting pain, which is not intense enough to prevent sleep. The finger when held dependent is more painful than when supported. This red, slightly elevated area involves both the epidermis and the derma. Vesicles form from point to point, these become pustules, and the dermal inflammation which extends is temporarily checked at the different flexures of the fingers until it involves the whole finger, and occasionally spreads on to the palm or dorsum of the hand. Copper workers, zinc workers and paper-box workmen are particularly apt to have this trouble. It is purely a local affection, and is self-limited when the cause is removed. Its treatment may be carried out by the application of any one of the astringent lotions like liq. plumb. subacet., or, what is preferable, a 1-20000 solution of corrosive sublimate. This, in the course of forty-eight to sixty hours, will check the dermal inflammation, as a rule, and then exfoliation of the skin of the finger will occur.

II. PARONYCHIA.

This is a form of inflammation which occurs in the structures lying at the root of a nail, and it may appear when any crack has occurred in the skin overlying the luna of the nail. Usually a smarting, stinging, or throbbing pain exists for a few hours, definitely

localized in a tender, reddened area at the point of infection ; for I believe that usually this is the result of inoculation. (House-surgeons used to be particularly liable to this affection, but of late years have had less trouble). At the end of one or two days there is usually a small area of pus, and at this time by appropriate surgical interference a great deal of trouble can be averted. If, on the other hand, this is neglected the pus is retained by the tense band of the union of the derma at this point, and passes downward to the matrix of the nail, and then begins to burrow beneath the nail. This occurs at the end of four or five days, until finally the matrix of the nail is completely undermined, and the nail is thrown off at the end of several weeks or months. This process may stop and the pus be discharged from beneath the skin covering the luna of the nail, in which case the nail is not lost. When, however, the process passes down beneath the nail the pus continues to discharge, at times changing to a thin, straw-colored fluid, the skin at the root of the nail becomes a livid white, is sodden and saturated with purulent material, until relief is afforded by allowing a free exit for the retained fluids.

The early treatment of this affection is very simple. The part of the skin overlying the luna should be thoroughly divided, so that pus is evacuated. It may be necessary to use primary anaesthesia or cocaine. Then a moist, hot antiseptic dressing * should be applied and changed once in four hours, and usually at the end of twenty-four to forty-eight hours wrinkling of the skin, subsidence of reddening and pain having occurred, the process is checked. After this a dry dressing, like aristol, can be used to advantage ; but if there is any recurrence of active inflammation, a moist, hot, antiseptic dressing should again be used.

Not infrequently this simple treatment is futile, for as soon as the moist, hot, antiseptic dressing is resumed the soft parts at the root of the nail become actively inflamed again, and when this occurs one may abandon an antiseptic dressing, and attach the free end of a narrow strip of adhesive plaster (three-eighths to half an inch wide and four-fifths of an inch long) to the side of the finger, and wrap it around the finger in a spiral. This attachment of plaster draws away the skin from the nail, and into the sulcus nitrate of lead may be dusted. This "dries" up the discharge, and is of assistance in checking an obstinate inflammation at the root of a nail.

When the pus has passed down beneath the nail, or the end of the finger has become sodden and club-

shaped from the retained purulent material, the nail should be removed, care being taken to remove the lateral expansions at the root of the nail ; this allows a free exit of the pus, and the use of any antiseptic dressing will quickly put the finger on the road to recovery. Nails grow in from four to six months.

III. CELLULITIS OF THE FINGER.

In the clinical history of this affection there is usually a story of a contusion or a direct inoculation by a pin or needle, and then within twelve or twenty-four hours there begins a throbbing pain distinctly localized at one point on the palmar surface of the finger. This gradually becomes reddened, slightly dusky, and the whole finger end becomes tense from the swelling. The throbbing pain continues, but is rarely sufficient to keep the patient awake the first, or even the second night. By the third night the pain is usually so intense that the patient will have simply "cat-naps." Usually before this a poultice has been applied, and the pus has more or less localized itself at some point on the extremity of the finger.

The treatment is simple, not imperative. It requires a limited incision into the pulp of the finger ; a thorough evacuation of the pus ; and the application of a moist, hot, antiseptic dressing.

Even if an incision is not made in the finger, after a proper amount of poulticing the pus will evacuate itself, and, although, possibly an unpleasant scar will be left on the finger no permanent impairment of the finger tip will occur ; so that the prognosis of this affection is good.

IV. SUPPURATIVE THECITIS.

This affection may be due either to direct inoculation by a needle or pin ; severe bruising of the soft parts overlying the tendons ; or a long-continued use of the flexor tendons in a patient unaccustomed to their use ; for instance, stone-masons who have been out of work for a time, and who on returning to their work have to handle rough stones which they have grown unaccustomed to, occasionally start up a serious suppurative thecitis which involves the fingers and palm of the hand.

The clinical history is as follows : A pulsating, throbbing pain referred to the whole finger is one of the first symptoms noticed. It comes often before much swelling occurs in the finger, and certainly before redness makes its appearance. This throbbing pain is severe, but for the first twenty-four hours does not keep the patient awake. With intelligent patients I have found that they could define accurately the limits of the suppurative process in the sheath of the tendon. Pressure laterally on the finger is painless, while pressure on the tendon is very painful.

* This should consist of clean gauze or absorbent cotton wrung out in a solution of 1-2000 of corrosive sublimate ; should be generous, that by its extent and bulk it may macerate all the surrounding parts ; and it should be enveloped in some form of "protective," as oil muslin, macintosh or oiled paper, that the heat and moisture may be retained.

The spread of the inflammation up the course of the tendon is delayed at the flexures of the fingers, and starting, for instance, in the middle finger in the second joint, it is usually forty-eight hours before the thecitis has spread to the palm of the hand. The finger is flexed on itself in order to render it less tense, and by the end of the third day the whole finger is involved in the process, and usually relief to the severe throbbing pain occurs suddenly by the bursting of the sheath of the tendon, and thus direct infection of the surrounding cellular parts occurs.

If no relief is afforded by surgical measures the whole finger is soon involved. It becomes tensely swollen; a livid red, exquisitely sensitive; the entire finger assumes the shape of a sausage; the joints are involved in the suppurative process; the sheath of the tendon becomes loaded with pus, and utter destruction of the finger is the result.

If the pus confines itself alone to the finger it will be most fortunate, but usually the inflammatory process extends upwards along the course of the tendons into the palm of the hand, beneath the annular ligament and into the forearm; until the palmar fascia is tensely distended, and the forearm and arm filled with channels of pus. When it reaches this stage often the patient succumbs to the absorption of purulent material, or at best escapes with a hand and forearm crippled by the permanent gluing down of the muscles and tendons.

The treatment of this affection differs so widely from the two preceding ones that it is on this account that I speak so strongly in reference to a division of the diseases known and classed under the head of felon. The earliest surgical interference under ether, with careful antisepsis, will save the finger and the usefulness of the hand.

Any patient who has an early clinical history of thecitis, I should advise to take ether and have a careful incision made down to the sheath of the tendon, which if found distended can be thoroughly opened, and if necessary further openings can be made at other points in the course of the tendon and the pus allowed to escape. Then the surface should be thoroughly cleansed with an active germicide, 1-2000 corrosive sublimate, and the finger and hand immersed in a hot, moist, antiseptic dressing. Immobilization of the fingers, hand and arm are imperative; for under these circumstances the slightest motion of the flexor tendon may inoculate a fresh surface in the tendon sheath.

If, on the other hand, after making an incision down to the flexor tendon, at the end of twelve or eighteen hours we have no distention of the sheath of the tendon, useless or indiscriminate cuts, which I regret to say are not infrequently made into the

palmar surface of the finger, may be avoided. I have notes of four cases where I believe a simple cellulitis of the finger was converted into a suppurative thecitis by an incision made "down to the bone." In one instance the patient's life was sacrificed; in the other the pus extended into the deeper structures of the forearm, and permanently impaired the usefulness of the arm and hand.

The treatment of these cases, when the pus has involved the palm of the hand and forearm, should be by free incisions into all the available parts. These various incisions can be enlarged by Bigelow's dilator, which is like a glove stretcher, and drainage-tubes should be placed connecting the various openings. The hand and arm should then be treated with a hot, moist, antiseptic dressing, changed frequently, or by a continuous antiseptic bath, which is a very useful measure in the severer cases. Amputation of the arm is exceptionally called for.

The prognosis of this affection, if seen early and treated promptly and surgically, is good. A certain amount of stiffness of the finger, the sheath of which has been opened, will remain for a limited period of time; but massage, and a constant use of the hand after healing, will at the end of a few months nearly restore the finger to usefulness. Where, however, the pus has extended into the palm of the hand, and especially when it has involved the wrist and the deeper structures of the forearm, a most guarded prognosis must be given, not alone as regards the use of the arm, hand and finger, but as to life itself.

V. PERIOSTEITIS, OR OSTEITIS OF THE PHALANGES.

The clinical history of a periosteitis or osteitis of the phalanx is different from the preceding histories. As the result of some contusion, or occasionally by direct infection, we have, usually beginning in the evening, a severe pain definitely localized at some one point on the extremity of the last phalanx. This pain is so intense that sleep is out of the question. The finger may be slightly tense and perhaps glistening, but any marked degree of swelling has not occurred. The pain is so intense that the patient walks the floor, holding the hand and writhing with pain. This continues at varying intervals for from twenty-four to forty-eight and up to sixty hours, when the pain diminishes, the finger becomes more swollen and distended, and of a livid red color. This relief to pain is due to the bursting of the periosteum, and letting out of the pus into the surrounding parts; then we have added to the osteitis or periosteitis a cellulitis of the soft parts of the finger.

When the pain has persisted longer than three or four days, or has not been relieved by a free incision, I have inferred that there was an inflammation of the bone itself. Blebs then form on the tip of the finger,

until finally pus is discharged, and the finger is converted into a rounded nub of a livid red color, and finally, at the end of from eight to twelve weeks, there is cast off the sequestrum of the necrosed bone. The mischief to the bone in these cases is done very quickly; for it is a form of jugulation of the phalanx that occurs from the pus collecting beneath the sheath of the periosteum.

After the sequestrum has been cast off, at intervals varying from four to eight months, the finger heals, leaving a misshapen extremity, a distorted, curved nail, and a permanently impaired finger-tip.

The treatment of this affection is one requiring the promptest surgical interference. In seven instances I have made a direct incision into a finger within twelve hours of the beginning of the pain, and in each instance found a small area of pus. Here, in each case, the incision was carried directly down and through the periosteum. In two instances there was not complete relief to pain for two or three days. My belief is that in these cases the original trouble started in the osseous structure of the finger. If the incision is made early and thoroughly, we can frequently save the bone from becoming necrosed; but at the end of forty-eight hours I have found the bone irremediably damaged; and if a patient comes to me with a periosteitis or osteitis at the end of four or five days, I always warn them that the bone has been destroyed by the inflammatory process. This is an important point, for the patient often thinks that the surgical interference is the cause of the loss of the phalanx.

In those cases which come at the end of four or five days with the finger tensely swollen and filled with pus, a free incision hastens the recovery of the parts. In two instances I have removed the phalanx at this time endeavoring to save the periosteum, and in both instances have had a reproduction of a certain proportion of the phalanx.

Where a patient applies for relief at the end of several weeks, with the fingers swollen, livid and distended with pus, which has opened at various places about the end of the finger, on introducing a probe one can feel the bare bone, and an operation is necessary for its removal. A certain amount of shaping can be accomplished by adjusting a finger splint to the dorsum of the finger to retain the general shape of the phalanx, and in one instance I was enabled to produce a more slightly tip of the finger in this way.

From the foregoing it will be seen that the prognosis is very grave as regards the fate of the phalanx unless an early operative interference is made. If, on the other hand, the periosteum is opened thoroughly at an early hour the finger-tip may be saved.

It is, perhaps, unnecessary to say that in attempting to classify these various affections I may have failed

in making the definitions distinct; nevertheless, in actual practice the above classification has been of practical use to me. That these various affections run one into the other is equally true, and that at times it is impossible to make a clear distinction is true; but if by writing this paper I can throw any light on a more accurate understanding of the subject of felons my object will have been accomplished.

It has not been uncommon for me to meet cases which have been ignorantly treated. To make an incision down through the periosteum in a case of dermatitis is worse than useless; on the other hand, to fail to make an incision in a case of periosteitis or osteitis of the terminal phalanx at the earliest moment that the case comes to one is criminal negligence.

I have purposely omitted many little details of treatment in order to emphasize the importance of this differentiation of the various diseases which are known under the generic term of felon, and as a result of my personal experience I would suggest the following conclusions:

- (1) That the term "felon" be abolished.
- (2) That an anatomical classification of the inflammatory affections of the finger be adopted.
- (3) That in all cases of periosteitis or osteitis of the phalanx an immediate incision is imperative.
- (4) That in cases of suppurative thecitis an anæsthetic should be administered, and a careful incision made into the anatomical structures which are involved in the pathological process.—*Boston Medic. and Surgic. Jour.*, No. 5, 1892.

TREATMENT OF URINARY ABSCESSSES.

BY DR. HORTELOUP.

This name is employed to designate abscesses that are formed around the urethral canal between the median aponeurosis and the origin of the scrotum. They are due to the entrance of the urine into the surrounding cellular tissue, this resulting from a stricture usually situated in the bulbous region. The pressure of the urine behind the stricture produces a tear of the mucous membrane through which the fluid penetrates slowly and in an intermittent way, giving rise not to an infiltration, but to a regular abscess.

Voillemier describes two varieties of abscesses, the acute and the chronic. The evolution of the acute variety takes place in a few days; it begins as a hard, round tumor, which spreads rapidly toward the scrotum and the anus. Fluctuation is detected easily, and when opened, the mass appears as an extensive phlegmonous focus, at the bottom of which is found the urinary channel. The chronic abscess runs a

slower course. On palpation it feels like a hard, fibrous tumor surrounding the urethra. After a time it becomes painful and may open spontaneously.

The result of both forms of abscess is almost the same—a urinary fistula. The surgeon, to reach the purulent focus, is often obliged to cut through a considerable thickness of indurated tissue which is not yet ready to break down.

The acute abscess should be opened in the classical way, well drained and washed antiseptically. The chronic abscess can be opened, but the drainage is more difficult on account of the fibrous condition of the tissues, and a cure is obtained with difficulty. The stricture must not be attended to until the wound is granulating. Gradual dilatation or internal urethrotomy will rarely bring perfect cure, as the fibrous formations will not disappear under any kind of treatment. Therefore, a more radical operation is necessary—the complete excision of the purulent mass.

The operation is performed in the following manner: An assistant holds up the scrotum after a straight catheter has been passed down to the stricture. Two incisions are then made convex externally from the upper part of the abscess, and joined at a point about one centimeter from the anus. These incisions are directed inward towards the deep parts and come together in the median line near the urinary canal, including between them an area like a segment of an orange. The finger is then inserted to explore all the indurations, which are separated with the bistoury or scissors. The urethra appears at the bottom of the wound like a large injected artery. The latter is then explored carefully, and the nature of the lesion will decide whether the surgeon should perform internal or external urethrotomy, total or partial resection. Before proceeding further, a red gum catheter (No. 18 to 20) is introduced through the meatus. When it reaches the field of operation, it is drawn upon sufficiently so as to be given the proper curve, and by means of a large stylet introduced into the eye it is pushed into the bladder.

The surgeon must not fear to make a large incision. As the tissues of the perineum are very pliable, the edges of the wound are easily brought together by means of deep silk sutures and superficial catgut sutures. For the deep suture a curved needle is used; it is introduced one and one-half centimeters from the edge of the wound and brought out at the bottom, so that when it reaches the opposite side, it passes about one centimeter in front of the sound. By so doing there will be no pressure on the sound. A sufficient number of like sutures are made to approximate the upper four-fifths, leaving at the inferior end a channel for the discharge of the urine. The lips of the wound are then approximated by catgut su-

tures. A piece of iodoform gauze is introduced by the opening left at the inferior extremity, and a dressing of absorbent cotton placed around the penis and over the scrotum and perineum. Firm compression is maintained, which facilitates the union of the wound and relieves the engorgement of the tissues. The patient is placed in bed with a pillow under his legs, his knees being tied together with a towel.

Every two hours the bladder is emptied and washed with boric acid solution. The iodoform gauze is removed and a lighter dressing substituted. On the fourth day the sound is withdrawn and the urethra washed out through the meatus, the irrigation being repeated twice daily. At first the patient passes his water only through the inferior extremity of the wound, a canal being formed that somewhat resembles the urethral canal of females. The dressing consists of small pieces of cotton retained by a T bandage, which is removed when moist. On the fifth or sixth day, the deep sutures are removed, and the introduction of Benique bougies commenced. This is rather a delicate operation, especially after complete resection of the urethra. The catgut sutures are taken out on the tenth day—*Union Medicale*.

THE TREATMENT OF PENETRATING WOUNDS OF THE ABDOMEN.

Dr. Berger recently reported before the Paris Surgical Society a case of penetrating wound of the stomach, in which recovery ensued without surgical intervention. On the ground of this observation and others which he has made he was led to adopt the following rule in these cases: If the surgeon is called immediately after the accident, and there are obvious signs of a penetrating wound, laparotomy should be performed. On the other hand, if he is not consulted until twelve or fifteen hours have elapsed, it is better to abstain from active interference in the absence of symptoms, for at that time the patient's chances of recovery are not increased by laparotomy. M. Berger recently observed the following case: A young man, nineteen years of age, received a pistol shot in the epigastric region. On the following day, sixteen hours after the injury, he was called and found a circular wound extending two fingers' breadth beyond the umbilicus and a little to the left side; around it there existed a swelling which could be made out by palpation. The general condition of the patient was satisfactory; there was no fever nor reaction of any kind, and for this reason it was decided to abstain from surgical intervention, although the fact that the patient had vomited bloody matter of a chocolate hue after the accident, clearly demonstrated the presence of a perforating wound of the

stomach. Perfect rest, opiates and abstinence from food were prescribed for four days; after that time a return to the ordinary diet was gradually made. The patient had completely recovered on the fifteenth day.

In two other cases of pistol shot wounds of the stomach a cure was also obtained without operation. Two cases of penetrating wounds of the large intestines were observed by Berger. The one was a stab wound of the transverse colon; the other a pistol shot wound of the caecum. Both recovered, the former after intestinal suture, the latter without intervention. Six cases of wounds of the small intestine (one inflicted by a knife and five by a pistol shot) gave a mortality of five deaths. These figures clearly show that pistol shot wounds of the large intestines and stomach are much less serious than those of the small intestines.

M. Verneuil thinks that we should not only take in consideration the situation of the intestinal wound, but also the character of the contents of the injured organ—for this is the chief factor as regards the severity of wounds of the abdomen, as has been demonstrated by bacteriology. He records the following cases: A boy, six years old, sustained a penetrating wound of the abdomen from a small calibre bullet and died thirty-three hours later in profound coma. The wound was situated between the umbilicus and bladder, and the bullet had traversed the large intestine at a number of places. The second case was that of a waiter who was stabbed in the abdomen, the knife penetrating for a distance of about 15 centimeters. Verneuil was called in twenty minutes later, and found a protrusion of the small intestine through the wound—the protruding loop being perforated at one place. He established an artificial anus at the level of the intestinal perforation without enlarging the abdominal wound. The patient became moribund after this trivial operation and suffered from pronounced shock; twenty-four hours later there was marked tympanites of the abdomen, without rise of temperature, and death ensued. The autopsy showed a large quantity of blood in the abdomen, and a wound of the caecum; the hemorrhage probably came from a vessel of the caecum.

M. Reclus reported a number of cases last July, in which perforating wounds of the abdomen terminated in recovery. Dr. Levassor has observed four such cases. Reclus has investigated the toxicity of the various fluids contained in the alimentary canal. It was found that the contents of the stomach when injected into the peritoneal cavity became encysted, while those derived from the small intestine, when injected, always gave rise to trouble. After a wound of the intestine the opening is sometimes occluded by

a plug of mucus, and this form of spontaneous occlusion is of great importance. Shock does not, in his opinion, contraindicate surgical intervention, the more so as it often depends upon hemorrhage. Protruding loops of intestines should be replaced in the abdomen, after being carefully disinfected with water of a temperature of 55° C. If hemorrhage was present he would operate at once, otherwise he would abstain from surgical procedures.

M. Routier reports a case of gunshot wound of the abdomen, in which he performed laparotomy, the patient being fourteen years of age. The operation was made eight hours after the accident. A wound of the anterior wall of the stomach was found which was sutured. It was evident, also, that there was a wound of the intestine, owing to the presence of faecal matter in the abdominal cavity, but this could not be discovered. The patient died a few hours after the operation, and the autopsy revealed another wound of the stomach and several perforations of the small intestine.

M. Peyrot has recently put on record the case of a young man, aged 16, who was shot in the abdomen with a Flaubert rifle. There was a lacerated wound to the left side of the umbilicus. A few hours after the accident, the temperature rose to 38.8° C., and the pulse rate to 134, but these symptoms disappeared without operative interference. On the eighth day, however, they recurred, and at the same time a swelling made its appearance in the iliac fossa. The abdomen was opened and a general peritonitis was found, which terminated fatally.—*Scalpel. L'Union Medicale du Canada.*

A NEW TREATMENT OF ACUTE GONORRHOEA.

BY C. E. COTES, F. R. C. S.

Not feeling at all satisfied with the results of the various treatments of acute gonorrhœa usually adopted, I devised the following method. The patient is first made to micturate and thus remove the discharge from the urethra as far as possible. The endoscopic tube, warmed and oiled, is then passed into the urethra, the patient lying on a couch. As a rule the passage of the instrument gives rise to but slight pain, but occasionally in sensitive patients, or where inflammation is very acute, a ten per cent. solution of cocaine previously injected up the urethra will be found useful. The urethra is then thoroughly mopped with dry cotton wool fixed in a stilet and examined by the electric light. The exact limit of the inflammation can then be clearly seen. It is, as a rule, quite five inches from the meatus; it may be four inches even so early as the third day of the disease.

The implicated surface is at once to be recognized by its swollen, bright red appearance, as contrasted with the rosy color of the healthy urethra. Occasionally distended vessels can be seen coursing over the inflamed surface. It is important not to pass the endoscope tube needlessly far beyond the posterior limit of inflammation, which is usually sharply defined. The diseased membrane should now be carefully remopped with dry cotton wool, so as to remove every vestige of secretion and have a perfectly clean surface. A mop of cotton wool on a stilet, and charged with a solution of silver nitrate (ten grains to the ounce of water), should then be passed down the endoscopic tube and thrust through its distal aperture. The tube and the mop are then withdrawn simultaneously. By this means the walls of the urethra contract upon the mop and are thoroughly moistened by the solution. For the two inches of the urethra, near the meatus a fresh mop is used, so as to completely saturate this portion of the passage, in which the disease commences, and where also the inflammation is most intense. The patient will always complain of slight burning pain for a few minutes; but this gradually passes off, and in ten minutes or so he feels quite comfortable. He is recommended to take a hot bath at night, and to remain quiet, in bed if possible, the following day. The diet is regulated as usual. A saline purge, with an alkaline or copaiba mixture, is given internally, and the patient is instructed to use a mild cleansing injection, such as Condy's fluid (one drachm to the pint). But it should not be left to his unaided discretion to accomplish this task for himself. There is art even in such a slight proceeding as the administration of an injection. The injection is required to clean the diseased passage, not to distend the canal violently throughout its whole length. A glass syringe with a bulbous nozzle holding *only* two drachms is used. The patient, having micturated, should fill this syringe with hot water, and, removing any air that remains, insert the nozzle between the lips of the meatus, keeping it on the floor of the urethra and pressing the lips from side to side on to the nozzle. He now carefully empties the syringe up the urethra. As the meatus is a vertical slit, if he presses the lips on to the nozzle vertically, the aperture will gape, and so the injection will escape by the side of the nozzle and not pass up the canal. Hence the importance of lateral pressure. This warm water is simply intended to clean out the passage. Now he takes the medicated injection and uses it in a similiar manner, only this time he removes the syringe, but keeps the injection up the urethra, quite half a minute by pressing tightly the lips of the meatus. As regards the frequency of injection, the oftener the better. I always recommend it quite six times a day, but not the last

thing at night-time, as the distention of the canal which may result predisposes to chordee. I use only a two-drachm syringe, for after many experiments I have proved that this amount of fluid, when injected into the urethra, after death, distends the canal completely for rather more than four inches. If this amount be injected into an inflamed and thickened urethra, not to mention its tendency to spasm, more of the urethra must be distended, and this is not only unnecessary, but for manifest reasons unadvisable.

Forty-two cases of acute gonorrhœa have now been treated by me in this manner. With two exceptions the condition had existed in every case for many days, and in several instances was associated with severe chordee. The average time taken before these patients were quite well was a little under twelve days. Early cases are more amenable to treatment than those which have been established for some time. Two of the forty-two cases attended to were of two days' standing only. In each the inflammation was intense, and had extended backwards about four inches. The urethra was lined with thick purulent discharge, clinging to the walls and so difficult to remove that it certainly would not have been washed away by any injection. The discharges were well mopped away and the patients treated in accordance with the method described. The result was in each case a complete cure in five days, without a single annoying or bad symptom. Cured cases have been examined with the endoscope, and a perfectly healthy and normal urethra was invariably found. The immediate effect of the treatment is to produce a fairly free purulent discharge during the first twenty-four to forty-eight hours. The pus is thick, and often stringy and tenacious. The discharge rapidly diminishes in amount after this time, often being quite slight in four or five days. It is watery in appearance, and usually disappears entirely in seven or ten days. From the time the treatment is adopted the patient is quite free from scalding or micturition, and should he have suffered from chordee, the dilatation of the urethra which the treatment entails diminishes, and often abolishes that terrible complication.

There are two classes of cases which cannot be treated successfully by this method: namely those in which the meatus is abnormally small, so that the passage of the endoscope is impossible; and those in which the disease has extended so far back that it is out of reach of the application. The strength of the solution of nitrate of silver may be modified as experience dictates, and the question of a second application will sometimes arise. In none of the forty-two cases has this been found necessary.

The main points of the treatment are: 1. The treatment rests in the hands of the surgeon instead

of being left to the patient. 2. The urethra can be thoroughly cleansed, so that there is no doubt that the remedy is applied directly to the affected mucous membrane. Examination of the urethra by the endoscope immediately after micturition and injection almost always shows that there is still a thick coagulated discharge adherent to the walls, indicating the mechanical difficulty an injection would have had in acting directly on the mucous membrane. 3. The exact extent of the inflammation can be seen, and the remedy applied to its extreme posterior boundary. 4. The remedy is applied to the urethral walls when they are distended and stretched by the endoscopic tube, so that all furrows are obliterated. 5. Stronger applications can be used with safety, because the remedy is no longer applied blindly or by unskilled hands. 6. There is no fear of the application carrying the infected material to the distal part of the urethra, and thus giving rise to complications.—*Lancet*, Feb. 27, 1892.

REMARKS ON THE OPERATION OF EXCISION OF THE BREAST.

BY A. PEARCE GOULD, M. S.

1. *The Incision.*—Some difference of opinion exists as to the best direction for the elliptical incision which is almost invariably employed. In a clinical lecture published in the *Lancet* of May 9, 1891, Mr. Christopher Heath discusses this matter from the point of view of the more or less perfect drainage of the wound which can be obtained. Another point considered to be of importance is the ease with which the incision can be prolonged into the axilla for removal of infected glands. I would submit that neither of these considerations need have weight with the surgeon. There is no wound which is more easily and uniformly treated without resort to any means of drainage than that left after removal of the breast and axillary glands. It is sometimes convenient to prolong the incision into the axilla, but it is never necessary to do so, for it is quite easy to clear out the axilla complete through the wound made for removal of the mamma. Two considerations only should guide the surgeon in planning his incisions—one paramount, the other of secondary importance. The first is complete removal of the nipple and the skin over the tumor when it is malignant; the second is to have the cicatrix parallel to the fibres of the pectoralis major. In most cases these two objects are best attained by the same incision—one enclosing an ellipse of skin parallel with the anterior fold of the axilla when the arm is at a right angle with the trunk.

2. *The Axillary Glands.*—When the mamma is not the seat of a malignant growth, of course the surgeon will not invade the axilla, and even when the disease is sarcoma, the axillary glands should not be removed unless obviously diseased. During the last year I operated upon two patients with sarcoma of the breast, in whom secondary growths occurred in the axillary glands. But in cases of carcinoma of the mamma I am strongly of the opinion that it is the surgeon's duty, as a matter of routine, to remove all the axillary glands in their packing of fat. Where the glands are obviously diseased all surgeons are agreed that they should be removed, and difference of opinion only arises in the cases where no enlargement of the glands can be detected. It is assumed that in such cases no glandular disease exists, and it is asserted that the removal of the glands is an unnecessary extension of the operation and an additional danger. But the assumption is not well founded; for it is only when careful examination of the glands after removal has shown them to be free from cancerous infiltration that we can be sure that they are not infected, and then it must be remembered that it is just in these cases that the axillary glands can be removed with practically perfect safety. There is no adhesion to vessels, muscles or bone to render the operation hazardous. It is best to remove the axillary glands and fat in one mass, first separating it from the pectoral muscles, then from the serratus magnus, then from the subscapularis, and lastly from the vessels on the outer side. The fat should be removed quite up to the clavicle, as the chain of glands extends up to that bone. A raspatory is the best instrument to use when anything more than the finger is needed. The intercosto-humeral nerve should be preserved, and this can be easily done in all cases where the glandular infiltration is limited.

3. *Arrest of Hemorrhage.*—The most convenient plan is to pick up with pressure forceps any spurting arteries as they are cut, and then, when the breast is detached from the pectoral muscle, to carefully search for any smaller bleeding points and treat them in the same way. Then proceed with the clearance of the axilla and if any artery is divided, seize it also with forceps. Now remove the forceps in the order in which they were put on, taking great care not to open up the compressed ends of the arteries. Occasionally one or more arteries will require to be twisted—a ligature is never necessary. Sponges should be used only to dry the wound, and should never be rubbed over it; the less they are used the better. No bleeding point, however small, should be neglected.

4. *Irrigation.*—The wound should be thoroughly flushed with a solution of bichloride of mercury

(1 in 2000), after the hemorrhage has been arrested. I generally use four or five quarts of the solution, and find it a good plan to flush the wound with it just before fastening the last suture. Care must be taken to express all the fluid, and if this is done there is no fear of corrosive sublimate poisoning. Besides its action as an antiseptic, this solution is a valuable astringent, and greatly diminishes the subsequent serous exudation, and in this respect is far superior to carbolic acid solution.

5. *Suture and Drainage.*—I have obtained the best results with a continuous suture of the best chromicized catgut introduced at intervals of half an inch, and each loop caught up—the button hole stitch. A drainage tube should not be employed.

6. *The Dressing.*—The dressing should fulfill two conditions. It ought to be aseptic, and it should secure exact apposition of the wound surfaces without any movement, until primary adhesion has taken place. The rounded, firm, and yet elastic chest wall is admirably adapted for a surface of counter-pressure. Immediately over the wound I place a four-fold dressing of boric lint, large enough to extend about an inch in all directions beyond the wound surface. This is fixed in place by strips of strapping, cut two inches wide. They are fixed to the back at the level of the spine of the scapula, passed around the chest to the opposite shoulder, and put on from the lower edge of the dressing up to the anterior fold of the axilla. They are applied sufficiently firm to keep the flaps of skin well and even pressed against the thorax, and so prevent any bagging in the wound. Over this a dressing of gauze or wool is fastened on with a roller bandage carried round the trunk in an ascending figure of 8. Lastly the arm is fixed to the side, with the forearm lying across the trunk, the elbow bent at a right angle. This should be done by means of a sling, not by bandages. The best sling for the purpose is a common chamber towel folded in two, lengthwise. The forearm and arm are dropped between its two layers, the hand being just within one end, and then the other end is passed round the back under the opposite arm, and the two ends are pinned together and to the underlying bandage. Additional pins should be placed behind the arm and above the forearm. In this way the arm and forearm are securely, evenly and comfortably fixed, and by removing two or three of the pins the outer layer of the sling can be turned down, and the hand and forearm washed every day, without in the least disturbing the position of the arm and the rest of the dressing. One special feature of this dressing is that there is no bandage or sling over the shoulder or round the neck—a most important matter for the patient's comfort, as the head and neck can be moved

quite freely. A bandage passed round or over the neck is more than uncomfortable—it is inefficient, for it is sure to get loose.

The after treatment can be dismissed in a few words. The first trouble to combat is the pain in the back, which inevitably comes on when a patient lies in bed with the arm fixed to the side. For the first twenty-four hours a firm pillow should be carefully placed under the arm of the affected side so as to support it well; this may be entirely successful in relieving pain. After the first day I like the patient to be raised into the sitting posture, well supported by pillows or a bed-rest; this at once relieves the pain. On the second and each successive day the sling should be gently turned back, and while one hand is placed upon the arm to keep it fixed against the chest, the fingers, wrist and elbow should be flexed and extended, then washed, dried, powdered, and again fixed in the sling. This is a great refreshment to the patient, and in no way disturbs the wound or the dressings over it. On the fourth or fifth day, if all is well, the patient may get up and sit on a chair. On the seventh day the dressing should be removed, care being taken in turning back the deepest part of it, not to break down the union of the wound edges and surfaces. As a rule, union will be found complete if the edges have been brought into exact apposition without undue tension, and if the dressing has been affixed with the requisite amount of pressure. All the stitches should be cut and gently removed, and the tender cicatrix should be protected by a dressing of a double layer of sublimate gauze fixed on with collodion, and over that a light boric lint dressing may be fastened by a figure of 8 bandage round the body. The patient, if in a hospital, may now go home, and return in a week for the removal of this dressing, when, if the cicatrix is firm, no further treatment will be needed.—*Lancet*, Feb. 20, 1892.

THE OPERATIVE TREATMENT OF VOLVULUS OF THE SIGMOID FLEXURE.

BY PROF. H BRAUN, KONIGSBERG.

The author reports three cases of volvulus of the sigmoid flexure treated by surgical measures, two of which recovered, and presents the statistics of thirty-one cases operated upon by various surgeons during the past thirty years. He states that the diagnosis of this condition is possible in a comparatively frequent number of cases, and regards the following points as deserving of especial consideration :

1. The history given by the majority of these patients is that they have suffered for a long time

from sluggishness of the bowels, and sometimes from more or less persistent constipation, frequently difficult to relieve and attended with distension and tenderness of the abdomen. In many of these cases the last severe attack occurs without any apparent cause, sometimes after severe bodily exertion, sometimes after ingestion of indigestible substances.

2. The age of the patients is of diagnostic significance, most of them being advanced in years. Among 50 cases of volvulus of the sigmoid flexure collated by the author there were only two persons below the age of twenty years.

3. The sex of the patients is to be taken into consideration. According to the above statistics of 50 cases, 40 occurred in males and only ten in females. These figures agree with those furnished by Lichtenstern and Treves, but are opposed to those of Rokitansky, which, however, are based upon a much smaller number of observations.

4. The thorough examination of the abdomen is of utmost importance. Frequently the markedly distended sigmoid flexure can be wholly or in part mapped out by palpation. Von Wahl has especially called attention to the value of this symptom.

5. Vomiting is a symptom which deserves attention in these cases. It is present in most cases of intestinal occlusion and frequently becomes stercoceous. In severe and even fatal volvulus of the flexure it may be entirely wanting; usually, however, it is present, but very rarely assumes a faeculent character. Sometimes it occurs at the beginning or toward the end of the other symptoms of obstruction.

6. Another point which may be utilized for diagnostic purposes, but to which attention has not heretofore been drawn, is the demonstration of an accumulation of fluid in the abdominal cavity. This necessarily takes place whenever portions of the intestine with their attached mesentery are strangulated, as the result of stasis of the blood in the vessels of the affected parts; its origin is therefore entirely analogous to that of the fluid in a hernial sac in cases of strangulated hernia. This effusion of fluid may be so considerable in amount that it can be detected by palpation, as the author's experience has shown. Of course, the symptom is not pathognomonic of volvulus of the sigmoid flexure; but is confirmatory of strangulation of a large section of intestine when taken in connection with other symptoms, and after the presence of ascites or peritonitis has been excluded, which can usually be done without difficulty. Aside from volvulus the author has observed this condition in a case of laparotomy for strangulation of several intestinal coils by a Meckel's diverticulum.

As regards the methods of treatment in cases of volvulus of the sigmoid flexure, we should first attempt to overcome the torsion of the gut by injections of water or insufflation of air. That these measures have a favorable effect may be assumed *a priori*, but is rendered more probable by the special experiments of Heiberg, which showed that the intestines in dead bodies could be rotated on their axis by insufflation of air. Aside from these measures the taxis has been recommended by some authors, although little can be found in the literature as regards its method of application and results. Rendu advised that after introduction of a rectal tube the patient should be placed on his abdomen and then suddenly turned from the right to the left side. Jonathan Hutchinson suggested that after the patient had been profoundly anæsthetized, the abdomen should be vigorously kneaded, and the intestines forced upward, downward, and toward the sides; the patient should then be turned on his abdomen and shaken forwards and backwards, while large enemata were to be given.

As a further means of treating volvulus some authors have recommended puncture of the gut as a proceeding unattended with danger. Heiberg, on the ground of his experiments on the cadaver, even assumes that an "untwisting" of the intestine may result directly from the punctures. In Braun's opinion, this measure is admissible if the distended intestinal loops can be distinctly felt through the abdominal wall. Too much should not, however, be expected from this auxiliary, since he has found that only a small portion of the gut can be emptied in this manner and hence only a slight reduction in volume of the abdomen can be produced. Multiple punctures would give a better result, but the danger of infection of the abdominal cavity is thereby increased. Although in the majority of the cases the abdomen may be repeatedly punctured in the same individual without injury, the development of septic peritonitis from defective closure of the puncture can not be excluded with certainty. In a number of the cases tabulated by Braun the punctured intestine had to be sutured, because the openings had failed to close spontaneously. This is most likely to occur if the intestinal walls have lost their contractility.

If these measures fail to effect a cure within a short time, as is frequently the case, we have to chose between laparotomy, with direct removal of the obstruction, and enterotomy. If the diagnosis is quite positive and the patient is in a hospital where sufficient assistance can be secured, it will be best to perform laparotomy, as was done with success in two of the author's cases. If the diagnosis is doubtful and the external conditions unfavorable an artificial

should be established in cases where the abdomen is greatly distended. If during the performance of this operation we find evidences of firm strangulation of the gut laparotomy should be resorted to at once, or soon after, for removal of the obstruction. These evidences are a bluish discoloration or gangrenous appearance of the portion of intestine protruding into the abdominal wound, or the demonstration of a constricted and distended intestinal loop, or the out-flow of a large quantity of bloody-serous fluid.

The question whether in volvulus of the sigmoid flexure, a cure can be obtained by enterotomy alone, cannot be settled by statistics, since in cases running a favorable course after this operation the diagnosis that a torsion has existed can never be made with certainty. In establishing an artificial anus it is also possible that the distended sigmoid may be sutured to the abdominal wall, as has happened in several instances, and then the twisted loop would be fixed in a still more abnormal position. This faulty fixation is the more likely to occur since the sigmoid flexure is quite frequently greatly distended, while the intestine above the volvulus is empty.

In performing a laparotomy the incision in the linea alba is most useful, as by lateral incision any existing volvulus is more likely to be overlooked. To release the strangulation the tympanitic flexure should at once be drawn outside the abdomen, since, in consequence of its marked distension, it cannot be rotated into its normal position within the abdominal cavity. The withdrawal of the loop may be rendered difficult by the shortness of the mesentery of the descending colon or the presence of firm adhesions, but aside from the above reasons it is desirable as enabling us to observe any structural changes of the gut that may be present. Gangrene occurs chiefly at the place where both segments of the flexure have been twisted on each other. Besides this there may be found linear tears of the serosa, which should be sutured if met with during the operation, and may even necessitate resection.

If, after release of the torsion, the intestinal walls are found to be in a healthy state, the sigmoid flexure may be immediately returned to the abdominal cavity, a proceeding which is sometimes attended with great difficulties. It is frequently necessary, first, to puncture the distended and elongated flexure with a fine needle in order to evacuate the gas, and sometimes to suture these openings for the purpose of preventing escape of liquid faecal matter. In some cases incisions may even be required, which are best made in the longitudinal axis of the gut on the side opposite to the mesenteric attachment, and closed with a double suture. If the higher lying intestinal sections are markedly distended they sometimes also

require to be incised, although this is not likely to be of much value if peristalsis is much impaired. Senn, who regards incisions of the gut as necessary in all cases in order to effect reposition, advises that the patient be placed on the side, and then by raising up the intestinal coils the contents will gravitate toward the openings whence they are allowed to escape. The simplest procedure for this purpose, and one which is sufficient for the majority of cases, is to introduce a tube into the rectum at the beginning of the operation, through which the gases and fluid faeces are frequently evacuated immediately after the removal of the volvulus. If these evacuations do not occur spontaneously it may be advantageous to irrigate the gut from below.

After reposition has been effected it is desirable to adopt precautions to prevent a recurrence of the volvulus. Cases of this kind have been reported by Roser, Obalinski and Nussbaum. Roser suggested that the mesentery be attached to the peritoneum of the left abdominal wall by sutures, so that the upper segment of the flexure which is apt to be the most mobile, is fixed to a sufficient extent. This suggestion has not been followed by others. In one of his cases Braun, after untwisting the gut, sutured the colon portion of the flexure over an area of six centimetres to the left side of the abdomen by eight silk sutures; the result was favorable and this manner of fixation seemed to be more secure than attachment of the mesentery to the abdominal wall. Recently Senn has recommended for the same purpose that the meso-colon be shortened by establishing a fold parallel to the axis of the gut, but Braun thinks this is only practicable in exceptional cases. In his opinion the predisposing factor to the development of volvulus is not, as Senn assumes, a long mesocolon, but in the vast majority of cases a small mesentery which has undergone further shortening as the result of peritoneal inflammation. In such cases if we follow the suggestion of Senn and shorten the mesocolon, a flexion of the gut must result.

The steps of the operation are somewhat different if the site of volvulus or any other point of the flexure is found in a gangrenous condition. If the gangrene is not perfectly localized and suture of the part is not entirely free from risk, it is best to resect the entire flexure—the more so since the changes in the mucous membrane are often more marked than would appear from inspection of the outer surface of the gut. Extensive defects of the mucous membrane and dirty, grayish, fibrinous exudations are not infrequently met with in cases of volvulus of the flexure where the exterior of the gut seems but little changed. Such lesions would certainly have healed with difficulty, if at all susceptible of a cure.

Whether after resection it is preferable to directly unite the ends of the gut, to establish an artificial anus, or to perform entero-anastomosis according to Senn's method, will depend upon the character of the intestines and the strength of the patient. The formation of an artificial anus is accomplished in the most rapid manner and makes the slightest demands upon the patient's vitality, and should therefore be preferred in the majority of cases. If the volvulus cannot be removed and the intestine is still in a good condition entero-anastomosis rather will be indicated. The suggestion of Treves to puncture the intestine and then perform colotomy at the descending colon should not be adopted.

A study of the statistics collected by the author shows that of 17 cases in which the volvulus was removed by operation, 6 were cured (35. 5 per cent.) and 11 died. In two cases where laparotomy had been performed and the torsion removed, a recurrence of the volvulus took place, in one immediately after the operation and in the other four months later. Both patients died, one of them being subjected to a second operation. Four cases in which the volvulus was not discovered during operation terminated fatally. Of two patients on whom resection of the sigmoid flexure was performed one died on the thirty-second day from perforation of a gastric ulcer and the other was cured with formation of an artificial anus. Eight cases in which enterotomy was done died shortly after the operation. The author warns us not to conclude from this statement that the establishment of an artificial anus in volvulus of the flexure is entirely without value. He is convinced, however, from a study of the results that many of these patients could have been saved by an early resort to laparotomy or resection of the flexure—*Archiv für Klinische Chirurgie, Bd. xlvi, Hft. 1.*

DIVERTICULA OF THE OESOPHAGUS.

BY PROF. E. VON BERGMANN.

The term, diverticula, should be applied only to those dilatations of the oesophagus which occupy a circumscribed area and appear in form of a sacciform bulging of the wall, or of a bag-like appendage. Symmetrical, eccentric dilatations of one or more sections of the oesophagus are, as a rule, only found above strictures, especially those due to traumatic agents (caustics, hot liquids). In a few cases cylindrical and fusiform dilatations of the entire oesophagus have been observed without the existence of such strictures. These uniform dilatations, however, appear generally in the form of a cylinder or funnel and not in that of a cul-de-sac communicating by a wide or narrow opening with the oesophagus.

The section of oesophagus above a stricture is frequently in such a condition as to favor or lead directly to the formation of a sacculated distention. There is sometimes present, at this place, a sort of mesh-work made up of folds, adhesions, valves, etc., in the interspaces of which niches are formed which are gradually deepened and bulged out by food retained above the stenosis. Moreover, the oesophagus at the site of stricture is frequently drawn and fixed laterally by cicatrical contraction, so that its lumen is not continued in the middle of the stenosis, but entirely to one side. In consequence of this the ingesta are retained at the side of the opening and press upon the tissues, thus favoring the formation of a sacculation at the narrowed part. In view of these facts, it is strange that diverticula scarcely ever result in these cases, and this is due to the changes in the muscular tissue of the oesophagus and in the cicatrical tissue itself. A marked hypertrophy of the muscular elements, especially the circular muscles, usually occurs at an early period, which may extend for quite a distance above the site of stricture, but is especially pronounced in its immediate neighborhood. This uniform increase of the muscular layer prevents the bulging out of a limited portion of the oesophagus, and the extension of the cicatrical tissue acts in a similar manner. Hence in only seven out of one hundred cases reported by Hacker, were diverticula observed in strictures of the oesophagus, and even in these cases they were the result of peri-oesophageal, phlegmonous processes produced by the same traumatic agent which caused the stricture, or they resulted from false passages made by sounds.

According to the exhaustive investigations of Ziemssen and Zenker, the causes of diverticula of the oesophagus are either pulsion or traction; in the former case the force acts from without, in the latter it acts from within. The traction is produced by the contracting cicatrical tissue which results from the caseation and suppuration of mediastinal and bronchial glands. These glands are usually situated at the place where the oesophagus crosses the bronchus and below the latter, and the morbid changes in them are due to diseases of the lung, chiefly of tubercular character. After the gland has broken down and the caseous matter has been evacuated by perforation into a bronchus or into the oesophagus, it contracts and exerts traction upon the neighboring, i.e., the anterior, wall of the oesophagus. Thus are formed the small traction diverticula, scarcely larger than a hazelnut, of which there may be one or several united at their base. In connection with them is found a pigmented, thick, irregular cicatrix, the residue of the contracted gland, near or in which other enlarged glands are frequently observed. The traction diverticula are of

interest to the clinician, only in so far as they occasionally have given rise to severe and even fatal disturbances (perforation into the mediastinum by a foreign body, etc.) They do not manifest their presence by especial symptoms, and hence are not recognized during life.

The pulsion diverticula originate in an entirely different manner. The pressure exerted within the oesophagus by the passage of the food, gradually forces out some portion of its walls less resistant than the others, and thus leads to the formation of a pouch. It is evident that the diverticula could not be produced if there had not been a previous weakening of the oesophageal wall over a limited area; there may have been at this place a depression which was gradually deepened by the continued pressure, or a thinning of the tissues in consequence of a scar or muscular atrophy. Owing to the forcible pressure of the pharyngeal and oesophageal muscles the ingesta are forced into the pouch which gradually increases in size. The reason that in cases of traction diverticula a similar enlargement does not take place is that its base is formed by callous cicatricial tissue.

The pulsion diverticula are almost constantly situated on the posterior wall of the oesophagus at its commencement, under the lower margin of the inferior constrictor of the pharynx, opposite the cricoid cartilage. The changes in the oesophageal walls which lead to the formation of the pouch are chiefly of congenital origin (*fistula congenita colli*).

As regards the symptoms, the fact that the sound passes down without an obstacle at certain times, and at others is arrested in its passage, is of great significance, and enables us to exclude other diseases from the diagnosis. It is true that in cases of fibrous as well as cancerous stricture a similar condition may exist; but in all strictures there is present a feeling of resistance to the passage of the sound. In sounding a cancerous stricture, moreover, it is usually found that where a thicker sound fails to pass, a thinner one can be introduced, and after the latter has remained for a time, the former may be forced through the stenosis, or at least further downward than before. It is only in cases where valve-like folds are situated above the stricture that the sound may be caught in them, and after its disengagement may pass without further difficulty. Aside from the rarity of this condition, however, the history in cases of fibrous stricture and the usual situation of the cancerous stricture in the lower half of the oesophagus should be taken into consideration. Pulsion diverticula are situated high up, and can only be mistaken for other affections, because the sound is not arrested at the upper opening of the diverticulum, but glides to the bottom. They never extend, how-

ever, as far as the bifurcation of the trachea, below which point is the usual site of cancer. Carcinomata, situated higher up, are characterized by the early appearance of enlargement of the lymphatic glands, as well as by their tendency to extend above the arytenoid cartilage into the rima glottidis. Furthermore, they can be seen with the laryngoscope or oesophagoscope, and frequently can be felt with the finger. At the time when oesophageal cancers begin to give symptoms, they have usually broken down to a certain extent and the sound brings up fragments of tissue which should be examined microscopically.

Ewald thinks that diverticula may be compounded with spasmotic strictures of the oesophagus, and it cannot be denied that this condition if persisting for some time may give a somewhat similar symptomatology. Here, also, the sound may readily be introduced at one time, and then again be arrested. Moreover, in cases of spastic stricture masses of food may remain in the oesophagus and be vomited some time after their ingestion. The diagnosis, however, is soon arrived at. In spasmotic stricture the resistance is usually overcome by pressure with a thick sound, while in case of diverticula the head must be held in a certain position and the sound introduced in a certain way before the instrument can be passed along the oesophagus.—*Archiv für Klinische Chirurgie*, Bd. xliv, Hft. 1, 1892.

Puncture of the Subcutaneous Tissue in Dropsy.—Dr. Gerhart recommends these punctures in cases of marked dropsy. This little operation is performed in the following manner at his clinic: The patient is seated in an arm-chair, with the legs extended over a board which rests upon a wooden receptacle. The legs are brushed with soap and water and washed with sublimate solution, while the physician disinfects himself as carefully as before an operation. The knife is placed in a carbolized solution or a hot two per cent. soda solution. On the anterior surface of each leg four to eight incisions are made through the skin. Immediately after, the legs are covered with a layer of gauze, then with thick layers of sterilized cotton held in position by a few turns of a gauze bandage. The patient remains in a sitting posture as long as possible during the day, and at night when in bed a sheet of waterproof material is placed under the legs. As soon as the cotton becomes saturated with fluid it is removed, and a fresh dressing applied under aseptic precautions. If necessary the cotton or gauze is loosened from the skin by irrigation with a three per cent. carbolic or 1 to 2000 sublimate solution.—*Deutsche Medicinische Wochenschr.*, No. 7, 1892.

Surgical Memoranda.

The Dry Poultice in the Treatment of Epididymitis.—In the *Journal of Cutaneous and Genito-Urinary Diseases*, Dr. George Emerson Brewer reports the successful treatment of a number of cases of epididymitis by the "dry poultice." This name is given to a dressing of cotton wool applied thickly over the inflamed portion of the organ and extending on to the healthy skin. This is covered with thin rubber tissue held in place by a snugly applied gauze bandage and the whole placed in a suitable suspensory. Pains rapidly subside, the inflammation disappears, and the organ returns to its healthy state.—*Western Med. Reporter*.

A New Suture.—Dr. Alexander Fulton, in *Medical News*, January 23, 1892, describes a new suture. Round pieces of amber, about one-sixth of an inch in diameter, of various lengths, are used, perforated as required. Lead, glass, or any material that can be kept thoroughly aseptic may be used. Fine wire (silver preferred), after immersion in carbonized water, is run through the lip of the wound about half an inch from the edge when deep suture is desired, and one-third of an inch when more superficial suture is wanted. It is then put through the bar and clamped with a perforated shot. The lips of the wound are thus by traction brought in perfect apposition.—*Med. Age*, Feb. 10, 1892.

The Operative Treatment of Pericarditis.—At the meeting of the Berlin Medical Society, Jan. 6, 1892, Dr. Körte reported a case of pericarditis which he had cured by operative measures. The patient, a girl aged seven years, had developed the disease as the result of osteomyelitis of both tibia. Aspiration of the fifth intercostal space furnished thin pus rich in staphylococci and streptococci. The operator resected a portion of the fifth rib, 5cm. in length, opened the pericardium, evacuated about one litre of a thin purulent fluid. Although the heart was exposed by the incision, no disturbance of its function was observed, even after the pericardial sac had been thoroughly irrigated with a disinfectant fluid. The patient died twelve days after operation of cardiac failure. The autopsy demonstrated a number of pus channels in the left ventricle, some of which communicated with the pericardium, the posterior papillary muscles had been destroyed and the anterior was infiltrated with pus. It is probably that in this case abscesses first formed in the heart muscle, which ruptured into the pericardial sac and produced a pericarditis.—*Wien. Medizin. Presse.*, No. 5, 1892.

Elongation of the Ligamentum Patellæ as a Factor in the Production of Certain Knee Troubles.—Dr. Newton M. Shaffer concludes as follows on this subject :

1. Elongation of the ligamentum patellæ may produce weak, painful, and apparently inflamed knee-joints.
2. Many obscure knee-joint troubles, as well as impaired or difficult locomotion, may be explained by this condition.
3. Elongation of the ligamentum patellæ may produce a disability very like that produced by ligamentous union after transverse fracture of the patella.

And, finally, elongation of the ligamentum patellæ may be, and very frequently is, produced by forcibly breaking up a fibrous ankylosis of the knee-joint.—*Medical Record*, Jan. 16, 1892.

Resection of the Os Calcis and Astragalus.—Dr. Bogdanik describes the following procedure : The operator stands on the right side of the patient, and makes an incision beginning closely beneath the external malleolus, if the operation is performed on the left foot, but beneath the internal malleolus if on the right. The incision penetrates to the calcaneus and extends obliquely downwards and backwards, in the direction of the annular ligament and at a distance of one centimetre from the sole of the foot, toward the other malleolus. The calcaneus is sawed through in the same direction, while the foot is pressed by an assistant against the leg. As soon as the bone has been divided the foot can be readily folded back, so that the dorsum is in contact with the anterior surface of the leg, permitting an inspection of the ankle joint. The astragalus can now be grasped with bone forceps and removed with knife and scissors. It is of advantage to prolong the incision over both malleoli in the direction of the tendo Achilles, because this enabled us to draw upward the upper portion of the calcaneus. It is further advisable to retract the arteries and tendon with blunt hooks so as to prevent their injury by the knife. If the calcaneus is diseased the affected portion may be chiselled out, curetted, or, if necessary, the entire bone may be removed. After the removal of the astragalus the articular surfaces of the tibia and fibula can be readily brought into view.

The author has performed this operation on two patients and claims for it the following advantages :

1. The incision in the soft parts is small.
2. Injury of the vessels, tendons, muscles or nerves is avoided.
3. The situation of the scar is favorable.
4. The configuration of the foot is preserved.

—*Centralbl. f. Chirurgie*, No. 3, 1892.

Antiseptic Memoranda.

Antiseptic Mixtures.—Dr. A. Cavazzani has recently reported his experiments with mixtures of various antiseptics in the form of powders. His first observations were made in thirty cases of venereal buboes. He regards iodoform as one of our best remedies in these cases, but it has the disadvantage of not possessing marked antiseptic properties. To overcome this deficiency he added salicylic acid, which is powerfully disinfectant, but somewhat irritant. The irritation was, however, avoided by the addition of subnitrate of bismuth which is, moreover, slightly antiseptic. Finally, to increase the stimulant effect of this preparation in cases of atonic ulcers some camphor was added. After numerous trials the following formula was adopted :

Iodoform.....	55 parts.
Acid Salicylic.....	20 "
Bismuth Subnitr.....	20 "
Camphor.....	5 "

The ingredients are well rubbed together and form a pale yellowish, somewhat mealy powder, which produces slight, but transient irritation, when applied to fresh wounds. This mixture is an excellent disinfectant and stimulant in cases of bubo. Its disadvantage is that it encourages hemorrhage from the granulations, but this may be avoided by discontinuing it every fifth or sixth day and replacing it by iodol. In persons with delicate skin it may also produce excoriations.—*Wiener Mediz. Presse*.

Antiseptic Drainage in Abdominal Surgery.—Dr. J. H. Kellogg, of Battle Creek, finds that all suction apparatus for drainage of abdominal wounds have the disadvantage of allowing air carrying germs to enter the drainage tube and pass into the abdominal cavity whenever the fluid is withdrawn. He believes that this is the method by which infection occurs in the use of the drainage tube, and has devised the following apparatus for preventing this: It consists of 1st, the cotton filter—a simple thistle tube filled with cotton and covered with sheet lint; 2d, a wash bottle; 3d, a drainage tube like the ordinary tube, except that it has a lateral opening leading into a small short tube near its upper end; 4th, an ordinary evacuating syringe, the tube of which passes through a rubber cork, by which the upper end of the drainage-tube is closed while the fluid is being drawn out. As the fluid is drawn into the evacuating syringe, air is drawn down through the cotton filter, bubbles up through the wash-bottle, passes through rubber tube into the drainage-tube, outside the rubber tube, through which the fluid is evacuated. By this means the air,

which enters the drainage-tube, is thoroughly filtered. In dressing the wound, the drain is surrounded with moist gauze, heavily loaded with iodoform. The drainage-tube is lightly plugged with cotton wet with 1-1000 bichloride solution. A broad piece of sheet rubber is slipped over the upper end of the drainage-tube. The evacuating syringe and tube are kept immersed in a 1-1000 bichloride solution. The hands are thoroughly disinfected every time the apparatus is used.—*American Gynaecolog. Journal*.

What Cases Should be Drained After Abdominal Section?—Dr. Rufus B. Hall, of Cincinnati, has drained in every case of abdominal section which he has made since 1886. The objections to the drainage-tube that have been given at various times are that it is a source of septic infection, a frequent cause of hernia, a foreign body, a cause of irritation, and not infrequently omentum becomes fastened in the perforation, preventing its easy removal. As to the first objection, the author has seen no case of sepsis developed from the use of the drainage-tube; but it is evident that, unless the utmost care is taken, such an accident might occur. The tube should be pumped out every hour or two until it is removed. In his own cases he has seen two hernias developed in the line of cicatrix, but in neither of them did the hernia occur at the point where the drainage-tube was placed. He has seen no appreciable disturbance from irritation of the tube since he commenced using the small, perfectly smooth tube with no side perforations. The small, perforated tube of Dr. Price fulfills the requirements for abdominal drainage perfectly. If the dressing is so arranged as not to make pressure upon the outer end of the tube, no apprehension need be entertained as to it causing trouble from irritation, provided it be removed just as soon as the fluid becomes straw-colored. If one employs the old style large tube, with large side perforations, there is danger of omentum becoming forced through the openings, causing difficulty in removing the tube and possibly favoring the development of hernia; but in the use of the small tube with the narrow perforations, these dangers are reduced to a minimum.—*Medic. Record*.

Thiophen-iodide.—Dr. A. Hock has employed this preparation in Dittel's clinic in Vienna. It was applied either directly to wounds or in the following solution : thiophen-iodide 50.0, alcohol and sulphuric ether, of each 500.0, and glycerine 10.0. The remedy has a marked effect in arresting secretion in suppurating wounds, and an excellent disinfectant and deodorizer.—*Wien. Medizin. Presse*.

Correspondence.

"STRANGULATED HERNIA"

Editor, INTERNATIONAL JOURNAL OF SURGERY.

SIR:—In the March number of your Journal there appears an article on "Strangulated Hernia" by Dr. George G. Van Schaick, Attending Surgeon to the French Hospital, Instructor in the N. Y. Post Graduate Medical School, etc. written for the instruction of the general practitioner, with special reference to a method of treatment advocated by me in the *Medical News* Nov. 28, 1891. This treatment he criticises and condemns, without having tried it, displaying thereby the boldness of youth without the weight which experience alone can give. The arguments he adduces only tend to weaken his position. To say that taxis is a waste of time, that it is only successful by a lucky accident, that it should only be tried for from ten to fifteen minutes, that it is not so easy nor so safe as an operation, etc., etc., are, surely, peculiar doctrines for an instructor to enunciate and are not apt to lend weight to any statements he may make on the subject. Equally objectionable is his further statement that the profound shock which so often exists is sometimes rapidly fatal, even before any serious change has taken place in the bowel, and though reduction has been accomplished by gentle and skillful taxis. In such cases, autopsy reveals the true cause of death—partial reduction, reduction *en bloc*, rupture of bowel, etc., etc.

I am quite well aware that my method of treatment for strangulated hernia is not popular with young surgeons who are anxious to operate under any and all circumstances, but it would have shown more discretion on the part of the writer if he had first tried it before attempting to condemn it. I nowhere stated that it would do away entirely with operative interference. I did state, and I repeat the statement, that, by its early use, the vast majority of cases of strangulated hernia can be safely and successfully reduced; and, as a result, operations for strangulated hernia, now amongst the most common and fatal, would soon become quite rare.—In regard to the figures quoted, the explanation is easy. Strangulated hernia is ushered in with such urgent symptoms that medical aid is immediately summoned. If at once put on this treatment, before serious changes have taken place in the gut or adhesions formed, prompt reduction can be affected. No anæsthetics being used or required, too rough or too prolonged taxis is avoided. If after half an hour's trial of this treatment—in no case exceeding one

hour—reduction cannot be effected then an immediate operation should be performed. In this way the patient avoids the rough and injudicious taxis to which he is too often subjected, and from the effects of which the fatal result is often due, whereas, in the very few cases in which operative interference may be necessary, no time is lost, the patient is not exhausted, the parts are not bruised or torn, so that operating under such conditions, a favorable result can be confidently anticipated. As already stated, in my own experience this treatment has never failed. That my cases differ from others, as the writer claims, is simply "begging the question." They occurred in the course of a large private, hospital and consulting practice and varied in severity, as such cases do. Not all of them were at the point of death, as the writer's cases appear to have been. To infer that I advocate the reduction of a sphacelated or ruptured bowel is puerile. I do advocate a method of treatment which will prevent sphacelation or rupture, which is so simple that any one can use it and which will generally save the patient from an operation when he is least able to bear it.

Fourteen years' experience with this method of treating strangulated hernia, without a single failure, is warrant sufficient for me to say that I see no immediate necessity for either changing or modifying my opinion in the matter, but I venture to state that a little further experience on the part of Dr. Van Schaick will show him the absurdity of either criticising or condemning a method of treatment which he has never tested.

Yours respectfully,

ALEXANDER DALLAS, M. D.
65 W. 36 Street, N. Y.

TO OUR READERS.

We take pleasure in announcing that in the May issue will be published the following interesting original articles:—"Improved Traction Instruments," by Dr. George W. King, of Helena, Montana, with numerous illustrations.—"Rupture of the Urinary Bladder, with Fracture of the Symphysis Pubis," by Dr. Auguste Rhu, of Marion, O.—"A Contribution to the Etiology and Treatment of Spasmodic Torticollis," by Dr. Henry S. Shively, of New York.

At the request of a number of subscribers who desire to compete for the prizes offered by us, but have been prevented by lack of time from completing their articles, we have decided to extend the time of competition until July 1st, and will announce the awards in the July issue.

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To Contributors and Correspondents.—Original Articles, Clinical Reports, Correspondence upon subjects of General or Special Interest, News Items, &c., are solicited from members of the profession everywhere.

Authors favoring us with Original Articles should do so with the understanding that they are for exclusive publication in this Journal. Any deviation from this rule must be specially mentioned at the time of sending the manuscript.

Though not required for publication, all communications must contain the author's name and address, otherwise no attention will be paid to them.

Editorial Department.

NEW YORK, MAY, 1892.

THE IMPORTANCE OF MEDICAL MEETINGS.

There have been in the last few years many signs of improvement in things medical, many floating straws that showed the direction of amelioration, a host of indications to point out the steady growth of work, of thought and of achievement.

Prominent as a factor in this important movement is the tendency of cooperative endeavor manifested by the legion of meetings of societies and of congresses, that nowadays spread afar the views of eminent men the world over, that bring them together for mutual comparison of ideas and interchange of thought, and that is establishing a closer tie between members of the profession.

The meeting in June, at Detroit, of the American Medical Association is therefore of importance as continuing the good work, and as serving to bring in touch a legion of workers who, as with soldiers the world over, will carry away with them a more exalted idea of their duties and a greater determination to succeed, from standing shoulder to shoulder. It will show them that in our labors a man's prophetic powers tend to become no longer limited to his own country, but through the agency of such meetings are recognized with wondrous speed over lands and

seas. It is an amazing thing how at this date of the world's history a wedge that is introduced by one perhaps just emerged from obscurity may produce an effect that will be felt at antipodal distances.

The possession of such facilities is now acquired, and the only further movement must be the one toward greater efficiency in management, so as to obtain the utmost possible measure of good results from the work done. It has seemed to us that every important meeting might possibly prove of greatest use if one subject of special interest was selected for general discussion, so that it might be considered from the standpoint of all the general practitioners and specialists who might be directly or indirectly interested in it. This, of course, without prejudice to the reading of a variety of papers during the remainder of the session. There might be other improvements which at the present time we cannot even surmise the need of, but thought is now so busy in that direction that we are confident that all such congresses will improve in value with rapid strides, and remain the chief disseminators of knowledge at our disposal.

A PERTINENT SUGGESTION.

In an article elsewhere printed in this issue, Dr. Gaston says that "the question may be raised by some in regard to the advantage of reporting surgical cases which have a fatal termination, and yet these are danger signals which may save the unwary mariner from being wrecked in a voyage upon the same sea."

We take this opportunity to express our perfect concurrence with the views of our valued contributor. An unsuccessful result is invariably a greater teacher than a successful one, if the operator has been able to point out the exact reasons and factors that brought about the result. The best surgeon is the one who, through his own and the experience of others, knows all the pitfalls and the snares that may beset his path, and has learnt to avoid them. And if our surgical reading is to be limited to the experiences of those who report none but those cases of which the outcome has been favorable, our ideas as to the severity and risks of special procedures become distorted, inaccurate, and do injustice to ourselves and to our patients. We desire reports of unsuccessful cases, and their whys and wherefores, we can conceive of no greater usefulness for a surgical

paper than to become the sign of warning against dangers ahead. If our most prominent surgeons were to publish in any one paper none but those procedures which in their hands failed to relieve or were followed by death, that paper would be most widely read, not in a spirit of carping criticism, but as containing indications and warnings of the utmost importance and value. It would be a guide with which not a surgeon could afford to remain unprovided, and, of greater importance still, it would be a noble and fruitful example to lesser lights. It would lead to the more general adoption among all surgeons of a habit of reporting cases which of themselves are of supreme importance, and of presenting statistics far more representative of the real results of surgical endeavor than are many of those which have been so profusely accumulating for some years past.

SYMPHYSEOTOMY.

In 1768 Sigault, a French medical student, devised symphyseotomy, or division of the symphysis pubis, as a substitute for the Cæsarean section in cases of contracted pelvis, his idea being that sufficient separation of the pubic bones could thus be secured to permit of the passage of the child. Although at first received with some favor the operation was soon abandoned as impracticable, except in Italy where obstetricians have resorted to it from time to time. The latest attempt to revive it has been made by M. Charpentier, who recently read an exceedingly interesting paper on this subject before the Paris Academy of Medicine (*Bulletin de l'Académie de Médecine*). He states that when the symphysis pubis is divided, the pubic bones become separated to a considerable extent, and that the distance between the bones may be greatly increased if the woman's thighs are flexed and rotated outward. All the diameters of the pelvis are enlarged, especially the transverse and oblique. The sacro-iliac articulations are separated anteriorly; the posterior ligaments remain intact, while the anterior ligaments are detached from the anterior surface of the iliac bones without undergoing laceration.

One of the objections advanced by the opponents of symphyseotomy is that the severed pubic bones do not re-unite, or that if union occurs it is weak, so that the patient is permanently crippled. According to Charpentier this objection does not hold good, since in all the cases he has observed the women were able to resume their former occupations without experiencing any inconvenience from the operation. Recovery takes place in a very short time and is complete at the end of one or two weeks. Spinelli (*British Medical Journal*) has recently asserted that

the results of symphyseotomy, performed with anti-septic precautions, have been constantly favorable for the mothers and that the children run no risk from the procedure itself, the dangers which they incur being solely due to the manœuvres needed for extraction. This assertion is confirmed by the statistics of the last twenty-four operations performed at Naples by Morisani, Novi and other Italian obstetricians, all the twenty-four mothers and twenty-three of the children being saved.

What are the indications of symphyseotomy? The aim of its originator was to save the life of the child while assuring the safety of the mother. It was meant to supplant the Cæsarean section, which at that time, when antisepsis was practically unknown, was attended with a heavy mortality. Yet it failed to realize this object, because its indications must always remain limited. Charpentier maintains that the operation should be done only in cases where the division of the symphysis will secure sufficient increase of the pelvic diameters to allow delivery to take place without resort to violent efforts at extraction by version or the forceps. The Italian accoucheurs are agreed that symphyseotomy should not be performed whenever the antero-posterior diameter of the pelvis is below sixty-five millimetres, and that if it is, the Cæsarean operation must be resorted to. On the other hand, Playfair, in his well known treatise, states that "the utmost gain which even a wide separation of the symphysis pubis would give would be altogether insufficient to admit of the passage of even a mutilated foetus. Dr. Churchill concludes that even if it were possible to separate it to the extent of four inches, we should only have an increase of from four lines to half an inch in the antero-posterior diameter in which the obstruction generally is most marked."

Dr. Harris says, that he does not regard so much the gain in the conjugate diameter as in the transverse in symphyseotomy, and that the new operation, wherein the foetus is delivered by the forces of the mother in the large majority of cases, is far less fatal to her and the foetus than the original one, where the child was turned and forced into the world by traction.

Notwithstanding the favorable results of Italian and French obstetricians it does not seem as if symphyseotomy is ever destined to play an important part among obstetrical operations. The mortality of the Cæsarean section has been steadily reduced in latter years and it is probable that the future will witness a still greater reduction. On the other hand, symphyseotomy is admissible in only a small number of cases, and in the event of failure the dangers of a subsequent Cæsarean operation would be certainly increased.

Original Articles.

EXTIRPATION OF THE RECTUM FOR CARCINOMA.*

BY J. MACFADDEN GASTON, M. D.

Professor Principles and Practice of Surgery, Southern Medical College, Atlanta, Ga.

The patient referred to in the following clinical notes was presented at my office about the last of June by Dr. J. I. Darby, of Columbia, Ala.

He stated that some time previously he had treated the case for hemorrhoids by the injection of carbolic acid, with complete relief in that respect. But that subsequently there was trouble higher up in the rectum with more or less difficulty in evacuating the faeces, and that his general health had become impaired to some extent.

There was no family history of malignant disease, but his appearance led to the conclusion that there might be a cancerous cachexy. Having had occasion to report two cases of papilloma of the rectum with carcinomatous degeneration, which terminated fatally without operation, I recently advised in a similar case, under the care of Dr. K. C. Divine, the extirpation of the entire mass. This was done without serious consequences on May 30, 1891, and promised a good result, but there was a redevelopment of the induration above with a fatal result.

Temporary relief has been afforded in one of my cases and in one of the above colleague's by colostomy; but in this instance the radical operation seems to be indicated.

July 8, 1891, Mr. W. C. E., a white man, sixty-two years old, apparently without any constitutional disorder, was received at the Providence Infirmary with rectal trouble. Upon digital examination and exploration with the speculum, there was found to exist an induration and thickening of the submucous tissues extending from an inch within the anus up to the recto-colic junction. The mucous membrane presented a dark congested appearance attended with some oozing of blood. There was a marked constriction of the upper portion of the indurated structure, but admitting of the passage of the point of the index finger by forcible upward pressure, giving the impression that the structure above was not involved in the disease. It was therefore determined after consultation with several colleagues, that we had a case of carcinoma of the rectum of a circumscribed nature, which warranted an operation, and extirpation was performed as follows:

The patient was given a whiskey toddy, and a hypodermic injection of morphine, gr. $\frac{1}{4}$, with

atropia gr. 1-150, was administered, after which he was placed under the anesthetic influence of the A. C. E. mixture.

Having shaved the surface around the anus and over the sacrum, the parts were thoroughly washed, and all antiseptic precautions were adopted.

An incision of a semi-circular form was made on the posterior border of the anus, so as to extend beyond any of the muscular fibres of the sphincter ani and thus exclude this structure. An incision was then made in the median line from the salient convexity of this curved line to the middle of the sacrum, and carried down to the rectum. The os coccygis was now dissected out and removed, when by dissection and laceration of the cellular tissues around the rectum, it was separated from the adjacent structures. A guide to further proceeding was afforded by the index finger of an assistant being introduced through the anus into the rectum, and ligatures of strong silk were carried around the gut just above the internal sphincter and below the induration. Then, the finger was removed, and the ligatures were drawn tightly and tied, so as to control the bloodvessels, when the rectum was divided between them by scissors. The indurated mass was now enucleated with the points of the fingers, until the gut was reached above it, free from any deposition, and it was found that the bowel could be drawn down with little traction. The chain of an ecraseur was passed around the intestine entirely above the indurated and thickened rectum, so as to divide the sound intestinal canal, and thus detach the diseased structure.

The ligature being removed from the lower segment no bleeding occurred, and it was secured by interrupted suture to the upper segment, thus giving an outlet by the natural channel.

Drainage tubes were placed on each side of the intestine and the linear incision closed by suture excepting at the lower end, without stitching the curved line.

There was but little blood lost, and bleeding was controlled by the temporary use of forceps with torsion in conjunction with sponges wrung out of a very hot carbolized solution.

The dressing was completed by dusting with iodoform, applying a thick layer of iodoform gauze, and a compress of absorbent cotton secured by a bandage around the pelvis.

As the vital forces were somewhat depressed, hypodermics of whiskey had been resorted to toward the close of the operation. After rallying from the anesthetic, the hypodermic of morphia, gr. $\frac{1}{4}$, with atropia gr. $\frac{1}{150}$, was repeated.

*Read at the meeting of the Medical Ass'n of Georgia, April 21st, 1892.

No vomiting ensued, and all food was prohibited for the day, while only milk toast was allowed on the following day.

The patient had a comfortable night, but as it was desirable to keep the bowels from moving the morphin and atropia was used again next evening.

The clinical record for July 9th states that the patient is getting on fairly well, with pulse of 98 and temperature 100°. Upon removing the dressing on account of sero-sanguinolent exudation, the wound presented a good aspect.

The urine has been drawn by catheter, and this is to be continued so as to prevent any straining in the evacuation of the urine. There is no complaint of pain or soreness in the parts involved, and no inclination to evacuate the bowels.

JULY 10.—The report to-day at 12:30 P. M. is favorable, pulse being 95 beats and temperature 100°, after a good night's rest. He has taken no opiate this morning. Acet. ammon. ʒ iv., aq. camph. f ʒ ii., was taken in doses of a dessertspoonful every two hours.

The wound was dressed, and carbolized water thrown in through the drainage tubes. Removed the traction ligature which had been placed in the coats of the upper segment of the intestine and will remove the drainage tubes to-morrow. He is taking only milk toast thus far as diet.

JULY 11, 9:30 A. M.—Patient passed a good night under hypodermic, and has pulse of 80 and temperature of 100°. Removed drainage tube this morning, and finding a protruding hemorrhoid, injected 10 per cent. solution of carbolic acid. Wound has a good appearance. Patient is cheerful, with some appetite. No tendency to action of bowels, and less irritation of bladder. Urine has been drawn off with catheter.

JULY 12.—Increase of temperature, being 101°, and pulse 94 beats, with slight tympanites and soreness on percussion over the abdomen. There has been a desire to evacuate the bowels, which, however, has passed off again. There was faecal matter on the dressings, which evidently escaped from the lower part of the wound and not from the anus, indicating that the stitches had yielded so as to admit of its passage. The tube of a Davidson syringe being inserted at the opening left near the anus, a weak solution of carbolic acid in warm water was thrown up into the wound until it passed out entirely free from stain. With a daily repetition, or oftener if necessary, of this wash, it is hoped that no contamination will occur.

This increase of constitutional disturbance may be temporary, and the appearance of the external wound is satisfactory.

JULY 13.—At 11 A. M. found temperature something less than yesterday, but pulse more frequent, and abdomen still sensitive, yet not tympanitic. Bowels were moved through the wound yesterday evening, requiring change of dressing, and washed out thoroughly then, as also this morning, with carbolized water. He takes light nourishment and is cheerful. Ordered to-day :

B. Huxam's tinct.....	f ʒ ii.
Tinct. nux vomica,	f ʒ i.
Chlorate of potash,.....	ʒ i.
Water q. s.	f ʒ vi.

Take tablespoonful every four hours as tonic and alterative.

JULY 14.—Patient's condition at noon to-day does not show any aggravation of symptoms since report of yesterday. The temperature is 101 ¼°; pulse 105 beats; wound presenting good aspect. Faecal matter still passes by the opening near the anus, and the parts were thoroughly cleansed with the carbolized wash yesterday evening and again this morning, with complete change of dressings. He is anxious to sit up but is not allowed.

JULY 15.—There is nothing in the present condition of the patient to cause any serious apprehension. His temperature at 11 A. M. to-day is 100 ¾°, being the same as yesterday; but his pulse has risen up to 115 beats, without, however, impairing his appetite or preventing rest at night under the use of the hypodermic (morphine, gr. ¼, atropia, gr. 1/100). The soreness and tympanites of the abdomen have almost disappeared. Faeces still pass through the wound, but the parts are in good condition.

JULY 16.—A marked change came about rather unexpectedly during the day, ending in collapse. Hypodermics of whiskey and sulphuric ether, along with the external application of mustard and hot bottles to the lower extremities, were resorted to, and quinine and whiskey given internally, but availed nothing. The wound was opened up by removing all the stitches in the cutaneous incision from the anus up to the sacrum, with thorough cleansing of the entire tract and packing with iodoform gauze.

The prostration ended in a fatal result at 11 P. M. If we could have anticipated the septic developments and opened up the wound forty-eight hours earlier, the septicaemia might have been averted.

The question may be raised by some in regard to the advantage of reporting surgical cases which have a fatal termination, and yet these are danger signals which may save the unwary mariner from being wrecked in a voyage upon the same sea. All have realized in their own review of unfavorable cases that a useful lesson was learned, and, perhaps, in this special class of cases no feature of the manage-

ment is more important than to avoid septic contamination from the contact of the faeces with the fresh cut surface. The absorption being rapid, the same kind of effects are produced as in the perforation of the appendix vermicularis with escape of its fecal contents, and collapse is the consequence at an early period.

In operating under similar circumstances, the open treatment of the wound commends itself to adoption, even when the walls of the upper and lower segment of the intestine are brought together by suture.

When it was discovered that the faeces escaped through the wound, the removal of all the cutaneous stitches was canvassed; but as there was a free communication from the lower to the upper extremity of the wound, admitting of thorough irrigation, this was not done until it was too late.

Had the wound been exposed and packed with antiseptic gauze, it would have offered a better prospect of success and doubtless would have averted the fatal result. Let others profit by this case, having a good promise and bad ending.

THE NASAL DOUCHE.

BY LEONARD A. DESSAR, M. D.

Visiting Laryngologist to St. Mark's Hospital and to the Mt. Sinai Hospital Dispensary, New York.

Fluids may be introduced into the nasal passages in the form of snuffing, injecting, spraying, or by means of the so-called nasal douche. In this brief paper I shall only attempt to discuss the indications and manner of application of the nasal douche, for, as experience has shown, the other methods are practically inadequate, in that they do not serve the purpose of thoroughly cleansing the entire nasal passages and are more difficult of application in the hands of the patient. Sprays of all kinds have been recommended, principally that of Leffert, but none of them are available for the introduction of sufficient fluids into the nasal cavities to act as a cleansing agent, as they are better adapted owing to the small amount of fluid introduced as a means of topical medication of the mucous membrane.

Syringes are objectionable in that the stream of fluid thrown into the nostrils may pass through without necessarily cleansing to any great extent the mucous membrane. While it is true that the injected fluid comes in contact with the floor of the nose it does not reach to any extent the middle or superior meatus. Aside from this the quantity of fluid injected must be small if the proper sized syringe be used, the employment of a syringe throwing a stream powerful enough to exert a cleansing action, being attended with considerable risk.

The snuffing up of fluids is a laborious and, for children, a most difficult procedure. Dr. Rumbold, of St. Louis, in an exhaustive paper on this subject prescribes certain methods of snuffing up fluids, but unless the complicated rules formulated by him are strictly adhered to, it must be impossible to derive any benefit from this method. Furthermore, experience has convinced me that indiscriminate snuffing up of fluids is not free from risks on account of the possibility of their entering the Eustachian tube and giving rise to disease of the middle ear.

The douche subserves the double purpose of more effectively cleansing the nasal cavities than the other means referred to, and of exerting a local action, such as an alkaline, astringent, and antiseptic effect upon the mucous membrane. The nasal douche, so called by Theodore Weber of Halle, was first introduced by him as a means of thoroughly cleansing the nasal passages and post-nasal space. Although known throughout England and America as Thudichum's douche, Weber was undoubtedly the first to suggest its employment. Other douches have been introduced from time to time, such as Parson's, Harrison Allen's, etc., but as their action is based upon the same principle as the Weber douche, it will be unnecessary to allude to them separately, as one description will suffice for all.

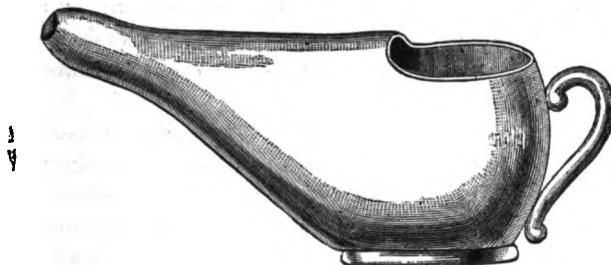
The Weber douche consists of a vessel connected at the bottom with a rubber tube, terminating in a rounded tip, which fits into the nostrils. After inserting the tip, the vessel containing the fluid is raised to the level of the head or slightly above, the head being inclined over a basin which receives the discharged fluid. When the reservoir is raised the stream enters one nostril, passes around the posterior border of the septum, and escapes through the other in a continuous stream.

The Weber douche, however, is a dangerous appliance in the hands of the patient, for unless full and exact directions are given by the physician and implicitly followed by the patient, great harm may result. If the stream is projected with too much force in consequence of the reservoir being suspended at too great a height the fluid may be driven into the Eustachian tube causing inflammation of the middle ear, rupture of the drum membrane, and even extension of the inflammation to the mastoid cells. According to Mackenzie, too much pressure of a continuous stream causes physiological insufficiency of the muscles surrounding the Eustachian orifice, which predisposes to the entrance of fluids into the middle ear. Roosa and Knapp have particularly called attention to the injurious effects of the Weber douche, and my experience is confirmatory of their's. Another danger in using this douche is that fluid

may be forced into the frontal sinus, if the head be accidentally inclined too far forward, causing severe headaches lasting several hours and even severe inflammation of the lining membrane of these cavities.

My main objection to the Weber douche is the fact that it cannot be safely entrusted to the average patient. I have repeatedly seen the apparatus suspended high up on the wall, or raised by an assistant standing on a chair. It can easily be understood how the high pressure thus induced will produce the above mentioned complications. Much of the danger attending the use of this appliance, however, could be obviated if physicians would give exact and specific instructions regarding its manner of application and the patients were intelligent enough to understand and appreciate their importance. It must also be remembered that many persons resort to the nasal douche without the advice of a physician, and thus incur all the harmful results attending its use.

For these reasons I was led to devise a simple apparatus which could be safely entrusted to the patient, with few directions as to its manner of application, and which would thoroughly cleanse the



nasal passages. As shown by the subjoined illustration the douche consists of a glass cup, terminating in a nozzle at one end, which is shaped so as to fit in the nostril, the capacity of the cup being two and one-half fluid ounces. I am in the habit of giving the following directions regarding its use:—Fill the cup with the medicated luke-warm fluid, then throwing the head backward, insert nozzle tightly into the nostril, and allow the contents to flow through the nasal passage. As soon as the fluid is felt in the throat the head should be inclined forward and the mouth opened, causing the stream to return through the other nostril. The reason of this is as follows: The contact of the fluid with the soft palate produces through reflex action an approximation of the velum with the posterior pharyngeal wall shutting off the upper from the lower pharyngeal space. Holding the breath, continuous mouth respiration, or inclination of the head forward, aid in bringing about this result.

PRECAUTIONS IN THE USE OF THE DOUCHE.—The following rules should be observed in the use of all nasal douches:

1. The handkerchief should not be used for at least ten minutes after douching, inasmuch as in blowing the nose any fluid remaining in the nasal passages may by a Valsalva action be forced into the Eustachian tube.

2. After douching it is advisable for the patient to remain in-doors, so as to avoid exposure to the cold air.

3. During the proceeding the patient should not be disturbed or excited, as this may give rise to an involuntary attack of sneezing, coughing or swallowing, and thus render it possible for fluids to enter the middle ear.

4. Before beginning the douching a careful examination should be made to see whether both nostrils are free. If one of them is found to be obstructed the douche should be used on the affected side.

5. Plain water should never be employed for douching as it loosens the nasal epithelium. The addition of a small amount of sodium chloride prevents this action.

6. Concentrated solutions should never be used as a douche.

7. It is not advisable to douche the nose more than three times daily, as a rule, its application morning and evening is sufficient.

8. The quantity of fluid introduced should not exceed ten ounces, the average amount varying from five to ten ounces, *i.e.*, from one to two douche cups fulls for each nostril.

9. The fluid should always be *luke warm*.

GENERAL INDICATIONS FOR THE USE OF THE DOUCHE.—The great advantage of cleansing the nasal mucous membrane is chiefly manifest in cases of acute, chronic and syphilitic rhinitis, and more especially in foetid rhinitis or ozœna. The douche is equally serviceable in similar affections of the nasopharynx. In acute rhinitis it acts not only as a cleansing agent, removing the tenacious masses of mucous, but also by reflex action, reduces the turgescence of the swollen turbinated bodies, thus acting as an important auxiliary to other measures in relieving the congestion. In acute inflammatory conditions of the nose, complicating the specific fevers, especially variola, measles, scarlet fever and diphtheria, the nasal douche is of great advantage. The solutions particularly applicable in cases of acute rhinitis, are a one per cent. solution of table salt or bicarbonate of soda, or both together in equal quantities. Weak solutions of chlorate of potash and salt, or bicarbonate of soda, are especially adapted for children. In cases where an antiseptic is required a few drops of carbolic acid may be added to any of the above solutions.

The nasal douche is a valuable auxiliary in the treatment of all forms of chronic rhinitis. It enables us to remove the accumulated mucus or mucopuss throughout the entire extent of the nasal passages, and thus relieves the mucous membrane of irritating material and places it in a condition to be more actively affected by local applications. In certain forms of chronic rhinitis I have seen severe epistaxis result from the forcible dislodgement of scaly masses firmly adherent to the cartilaginous septum. The tearing off of these crusts by blowing the nose or by the manipulations of the patient, leads to laceration of the capillary walls, causing hemorrhage and small wounds through which infection (erysipelas) may take place. It is obvious that the systematic employment of the douche by softening and washing out these scaly deposits will act as a prevention of the above mentioned complications. In these cases I find one drop of creolin to a douche cupful of water very beneficial. If severe epistaxis be present a stronger solution of this drug may be used. A five volume solution of peroxide of hydrogen (one part to three parts of water) used in the douche cup is an exceedingly valuable means of controlling hemorrhage. Tannic acid and sulphate of zinc, 1 to 2 grains of each to the ounce, tannic and salicylic acids, same strength are also useful as solutions for the douche in chronic rhinitis. The formula of Stöerk, which I have employed frequently with good results, is as follows:

B	
Sodii Salicylat.....	
Sodii Bicarbonat.....	
Sodii Chloridi... aa.....	3 ii

A knife-pointful to each douche cupful of water.

There is no affection of the nose, however, in which the douche can be used to greater advantage than in the treatment of ozæna. In this condition the thorough removal of the crusts and pus accumulations is of extreme importance. Pus collecting in the nasal cavities assumes an acrid property and becomes a local irritant. The crusts and discharges contain decomposing fat globules and micro-organisms, thus producing the fetid odor which is characteristic of the disease. These incrustations should never be forcibly removed, but softened and washed out by the action of the douche. One of the great advantages of the douche is that it enables the patient to keep his nasal passages comparatively free from crusts and discharges, and to thus lessen, to some extent, the fetid odor. Inasmuch as these cases, if cured at all, require a very protracted period of treatment, the nasal douche cup will be found a thorough and safe means of cleansing the affected mucous membrane.

In the treatment of ozæna douches of disinfectants and deodorizers are indicated. For this purpose

weak solutions of sodium chloride and carbolic acid, potassium permanganate (one drachm to eight ounces), creolin (one to five drops to two and one-half ounces), salicylate of soda, Seiler's or Dobells solutions, etc., can be employed. In other forms of rhinitis, such as tubercular or syphilitic, the indications for the nasal douche are the same.

CONTRAINDICATIONS TO THE USE OF THE DOUCHE.
—In cases of extensive adenoid growths or tumors of the pharyngeal vault, the douche, if employed at all, must be used with caution. There are also cases in which the patient experiences sharp cutting pains in the region of the ear during douching, and these may be of sufficient severity to render it necessary to dispense with its use.

In conclusion I would urge attention to the following practical points:

1. The great importance of thoroughly cleansing the nasal mucous membrane in all affections of the nose, both as a means of relieving the discomfort of the patient and of assisting the action of other curative measures.
2. The necessity of securing the co-operation of the patient in following out these measures at home.
3. The impossibility of thoroughly attaining this result by the use of the hand spray, syringes and snuffing up of fluids.

58 W. 49th St.

A CONTRIBUTION TO THE ETIOLOGY AND TREATMENT OF SPASMODIC TORTICOLLIS.

BY HENRY L. SHIVELY, M. D.

*Assistant Surgeon to the Orthopaedic Dispensary and Hospital.
Late House Surgeon to the Presbyterian Hospital
New York.*

The intractable character of spasmodic torticollis, the relative infrequency of its occurrence, the obscurity of its etiology and pathology render this affection one of the most interesting of nervous diseases, presenting conditions for treatment, often alike baffling to the neurologist, the orthopaedic and general surgeon. The following case came to me for treatment September 17, 1891.

C. J. W., a young man, age 25, a farmer by occupation. Mother and father both of distinctly nervous temperament, the family history otherwise good. The patient himself has always had good health until the development of the present trouble. He has no alcoholic habit and denies history of venereal disease. He admits having practiced masturbation prior to his marriage ten months ago, since which time he has regularly had intercourse three or four times each night, frequently supplemented by indulgence during the day as well. The sexual act was never completed,

withdrawal before ejaculation occurred, having been habitually practised to prevent conception, according to the ancient method attributed to Onan in the thirty-eighth chapter of Genesis. After one month of these excesses the patient observed a tendency in his head to incline to the left side. Shortly after he noticed a slight rigidity and abnormal prominence of the right sterno-mastoid muscle. This rigidity at first was intermittent, later other muscles of the back of the neck became similarly involved, and the head was directed more strongly to the left and slightly flexed. His condition grew worse, the muscular contractions being attended with pain and the head sometimes remaining fixed for a day at a time. The muscles would then partially relax, but at no time in the past four months can he say that he has been entirely free from spasm. Severe paroxysms, during which he suffered from clonic seizures in addition to the more or less permanent tonic contraction of the affected muscles would occur several times a day. At times he would have spontaneous periods of improvement during which he would be fairly comfortable for two or three days. He thinks that emotion or excitement of any kind tends to bring on the more severe attacks.

Various plans of treatment including counter-irritation, nervines, galvanism and narcotics have been tried without success and he has steadily grown worse. He has taken arsenic until oedema of the eyelids and cheeks developed. Some temporary relief appeared to follow a long course of galvanism and Turkish baths.

On examination the patient is poorly nourished, rather undersized and anaemic. His expression is dull and apathetic. His head is carried in the characteristic torticollis position, flexed to the right, slightly bent forward, the chin strongly rotated to the left. The right shoulder is elevated and a slight want of symmetry is apparent in the features; the angle of the mouth and outer canthus of the eye on the right side being depressed. On passive motion there is marked resistance which cannot be overcome on attempting to rotate the head toward the median line. The upper fibres of the right trapezius and both the clavicular and sternal portions of the sterno-mastoid are firmly contracted and rigid. Later both muscles were observed in a state of extreme tonic spasm in which the chin was strongly pressed against the chest, the face became congested and cyanotic, turgid and visibly pulsating. During these exacerbations the right shoulder is drawn up and severe pain is referred to the occiput and back of the neck. These paroxysms, the patient states, last from a few minutes to several hours.

The heart, lungs and urine are normal.

After two weeks of medical treatment, during which morphine and a mixture of hyoscyamus, conium and cannabis indica, pushed to their full narcotic effect, were the only drugs which appeared of the slightest benefit, resection of the spinal accessory nerve was decided upon.

Operation, October 3d, under the usual antiseptic precautions. An incision two and a half inches long was made down upon the anterior border of the right sterno-mastoid, beginning half an inch below the mastoid process. The integument and fasciae were successively divided, care being taken throughout the operation to closely hug the muscle as a guide. After dividing the platysma and deep cervical fascia the dissection was continued beneath the sterno-mastoid, and the spinal accessory found at the point where it pierces the under surface of the muscle. The nerve, normal in appearance, was caught on a tenaculum and dissected up to near where it emerges beneath the posterior belly of the digastric, lying to the outer side of the internal jugular vein which was plainly exposed at the bottom of the wound. A full inch was excised and the operation completed by providing for drainage at the lower angle of the wound, closing with catgut sutures and applying a firm dressing. There was no troublesome hemorrhage and no especial difficulty in finding the nerve.

As the patient came out of anaesthesia there was not any recurrence of spasm in the muscles supplied by the spinal accessory, but the head remained deflected to the left and occasional slight twitchings of the left shoulder were observed. The head was more movable and when held in corrected position there was much less tendency to deviate than before the operation. Increased resistance was felt at the back of the neck on the left side, and the splenius capitis could be felt as a hard roll beneath the anterior border of the left trapezius. On account of this rigidity and the convulsive twitching of the left shoulder it was feared that the condition might become as bad as before the operation and that the result might be merely the shifting of the disease to another group of muscles. At the beginning of the operation the spasm seemed to be limited entirely to the distribution of the right spinal accessory; it was now apparent that the deeper rotators of the head were involved as well. As a precaution the patient was kept for several days under the influence of morphine by local injections in the substance of the splenius.

The wound healed kindly and there was a marked improvement in all the symptoms, but not the immediate and complete relief which had been hoped for. There were occasional attacks of pain in the

head and neck, but in nothing like their former severity. The patient was kept under daily observation and treatment for six weeks after operation. He improved in general nutrition under tonics of iron, cinchona and cod-liver-oil, and the rigidity at the back of the neck appeared to be benefitted by injections of curarin and the daily application of poultices. During the after-treatment the patient was subject to restlessness, sleeplessness, was easily frightened, at times had morbid fancies, nervous chills and hot flashes. It was incidentally discovered that he was a favorable subject for hypnotism, and these hysterical symptoms and the pain in the neck and head were readily controlled thereafter by suggestion.

When his attention was diverted from himself, as in conversation or by music, the position of his head was much better, but as soon as his improvement was remarked and he became conscious of it himself there was an immediate return of the torticollis. There has been a gradual and continuous improvement since and now, five months after the operation, although there is not yet entire freedom in rotation to the right, yet he carries his head erect and perfectly straight without difficulty and is free from spasm. It is almost unnecessary to add that he was advised against the continuation of the practice which it is believed was a cause of his condition.

The pathology of spasmodic torticollis is practically *nil*. In some of the cases reported, a degeneration of the spinal accessory with sclerosis and the appearances of a local neuritis have been described, but where the nerve has been examined microscopically it has in most cases been found normal. Some authorities have considered the disease to be of central origin, and Keen, of Philadelphia, has even suggested as one of the possibilities of brain surgery the excision of the cortical center for rotation of the head. Ferrier and Horsley, however, declare that this center is too ill defined to render such an operation admissible in the present state of knowledge.

The etiology is as unsatisfactory. In most cases no cause can be assigned. It is often a symptom of hysteria, but it is then less persistent and far more amenable to treatment. Rheumatism and exposure are invoked as exciting causes, there may be an antecedent history of overwork or mental anxiety, and Gowers states that the disease may occur in the course of malarial or lead poisoning. In the case here reported there can be scarcely a doubt that the direct cause is to be found in the perverted sexual excesses which preceded so conspicuously the development of the disease.

As regards treatment, an analysis of the cases reported demonstrates the little benefit to be derived from drugs except where the condition is associated

with hysteria. Of the motor depressants, good results have occasionally been obtained from gelsemium. Bassette (*Journal of Nervous and Mental Diseases*, June 1890, Vol I., p. 394) reports obstinate cases which have been benefitted, and Weir Mitchell (*Ibid*, p. 417) cured two with gelsemium pushed to a full physiological effect. Morphine will control the spasm, but as there is the dread alternative of the habit it should be reserved in all cases as a *dernier resort*.

Orthopaedic appliances are of little use in the spasmodic form of torticollis for the reason that the patient cannot tolerate any form of fixation apparatus when the spasm is severe. Dr. M. Allen Starr has told me of an interesting case in which the spasm was checked by making pressure over a circumscribed area about the occipital protuberance to which pain and tenderness were referred. At the Orthopaedic Dispensary an apparatus, a modification of the Taylor spinal assistant, was applied in such a way as to make constant pressure upon this hyperesthetic spot. This patient returned to the dispensary a few weeks ago reporting a complete cure. A similar case is that of a prominent New York politician who suffers from spasmodic attacks of torticollis and finds that he can relieve the painful contraction by pressing on the back of his neck with the head of his cane or the handle of an umbrella. Most of the cases of true spasmodic torticollis, however, are not amenable to such simple means of treatment and either go unrelieved or come to operation. The results of resection of the spinal accessory nerve, as in the present case, are usually good and the operation can now be considered well established. Petit (*L'Union Médicale*, July 9th, 1891) has collected twenty-six cases. Of these, thirteen were entirely cured; seven sufficiently improved to resume their habitual occupations; in five, the relief was but slight, and there was one death from erysipelas. The incision upon the anterior border of the sternomastoid is the one usually preferred. Stretching the nerve has been tried, but the results are unsatisfactory. Simple division does not give as good results as where a considerable portion of the nerve is excised. Collier (*Lancet*, June 21, 1890, p. 1354) reports a case successfully treated by ligaturing and compressing the nerve with a tightly twisted silver wire. An unsuccessful case similarly treated is reported by Deaver and Mills (*Journal of Nervous and Mental Diseases*, vol. 17, p. 834). In the same journal (p. 832) an interesting case illustrating the failure of even the most radical surgery is reported by Morris J. Lewis. In his case both sternomastoids were entirely removed and both spinal accessories excised, but the tonic spasm and faulty position of the head persisted.

In cases where the deep posterior rotator muscles of the head are involved, Keen has described (*Annals of Surgery Journal*, Jan. 1891, vol. xiii, p. 44) a method of excising the posterior divisions of the first three cervical nerves which supply the splenius capitis, rectus capitis posterior major, and the obliquus inferior, the muscles chiefly implicated. This procedure is not always necessary, however, even where there is spasm of the deep muscles, as is shown in the present case, in which there has been for months a continuous improvement following excision of the spinal accessory alone.

330 West 57th St.

RUPTURE OF THE URINARY BLADDER, WITH FRACTURE OF THE SYMPHYSIS PUBIS.

BY AUGUSTE RHU, M.D., Marion, Ohio.

I trust that the following history of a somewhat rare case will prove of sufficient interest to warrant a careful perusal.

Mr. Orvin Beem, aged 61, was engaged in excavating a deep sewer ditch, the sides of which caved in, and he was caught under the falling earth, which covered his chest and abdomen and pinned him down. He was extricated by his fellow workmen, who took hold of his arms and upper part of his trunk as best they could, thus raising him by main force. It was found that he could not walk, and was consequently carried to his son's home near by. The physician called examined him carefully, and caused the reporters for the daily papers to announce that his patient was only slightly hurt, somewhat bruised and would be out in a few days. He gave him a hypodermic of morphia and advised rest, and prescribed a lotion containing opium, hamamelis and arnica to be applied over the bruised hips and abdomen. The following day January 28, 1892 it was observed that he had not as yet passed any urine since the injury, the day before, whereupon the attending physician attempted to pass a catheter without avail.

Thus far it had not been thought worth while to call in a surgeon for advice. But on the evening of the second day I was hastily summoned and found the following *status praesens*. An old man lying in dorsal decubitus on a low bed lounge, in a small kitchen covered by quilts; in fact a more uninverting unsanitary condition and surroundings for such a case could not readily be imagined. On inquiry, the attending physician said the patient had not passed any urine for two days or more, and asked me to catheterize him. The patient was well nourished, but had an anxious, but somewhat stupid expression.

Pulse 120, temperature 97° F., respiration 24. The abdomen was tympanitic, the skin over pubis ecchymosed, this ecchymosis extending from the hypogastric region upward to the right inguinal, iliac and lumbar regions. The scrotum was also inflamed and distended with fluid. The thighs and hypogastric regions were bespattered with blood. On passing the catheter into bladder, no urine was found, only a few drops of blood. On further examination of the hypogastric region, by palpation and percussion, I found a general infiltration of fluid just over the pubis, a large swelling, consisting chiefly of fluid, the splashing sound of which, could be heard by all present in the room. On the ground of these pathological conditions, I made a diagnosis of rupture of the urinary bladder and fracture of the symphysis pubis. At this point the attending physician urgently recommended that the bladder should be aspirated, to which I strongly objected. This suggestion, however, being not kindly received, I advised that another surgeon be called in to decide whether or not aspiration should be resorted to. Consequently two other physicians and surgeons were called in and the bladder was again explored with a silver catheter. At first no urine came, but later on quite a quantity of decomposed urine began to flow. The patient was finally moved into a clean bed and a large room and made quite comfortable. The physicians all advised that the catheter should be left in the bladder during the night and results awaited, basing their hopes on opium and nature. They gave a somewhat favorable prognosis.

My connection with the case here ceased for a time, since the three physicians thought that there was no rupture of the bladder. Another two days passed, but no improvement set in. The family again requested me to see the patient and placed the case in my hands, after I had given a fatal prognosis. I rendered the abdomen and body antiseptic and washed out the bladder with Thiersch's solution, and drained with a soft catheter, syphoning the fluid out as rapidly as formed. I advised against any operative interference at this late stage, since septicaemia had been present for several days and the case was necessary fatal. No improvement occurred and he died quietly on the beginning of the eighth day of his illness.

On post-mortem examination I found the bladder ruptured anteriorly and laterally on the right side, containing no urine, completely collapsed and matted together by inflammatory exudation. There was also a fracture of the symphysis pubis, the separation measuring four centimeters. On opening the peritoneal cavity I found the peritoneum and the head of the colon markedly inflamed, the same changes

involving some convolutions of the small intestines. The liver was also markedly inflamed. At the base of the cæcum there was a peritoneal rent in which the appendix vermicularis had become prolapsed, the appendix containing two faecal enteroliths the size of large beans. A temporary vesical cavity had been formed in the tissues surrounding the bladder, occupying the space between the separated pubic arches anteriorly and superiorly, extending from there to the right side of the pubic arch, descending as low as the ischium. There was also infiltration of the scrotum.

In presenting the above somewhat rare case in detail, I trust the surgeon will find some few thoughts worthy of notice. A correct diagnosis is of paramount importance, and ought to be made at the first examination, for if operative means are to be adopted, they must be resorted to at once and not on the third or fourth day. The chief diagnostic points to be remembered, are pain, inability to urinate; on catheterising the bladder, no urine will be found, a few drops of blood may be all that is withdrawn. In injuries involving the deep urethra we would find infiltration of urine into the scrotum and surrounding soft tissues of the hypogastric region, under such circumstances we also would strongly suspect fracture of the symphysis pubes. General shock is present. On careful palpation and percussion the fluid surrounding the bladder can be easily detected. In an intra-peritoneal rupture of the urinary bladder, we would expect a still greater degree of surgical shock and a rapidly developing peritonitis. From the above it will be readily appreciated that in all forms of rupture of the urinary bladder either intra- or extra-peritoneal, prompt surgical procedures should be adopted. The use of an aspirating apparatus should be avoided, for no good is likely to be accomplished by this measure. It should never be forgotten that a rupture of the bladder may be complicated by fracture of the symphysis pubis, or some one of the bones composing the pelvis.

RELIEF OF DEFORMITY AFTER A COMPLICATED POTT'S FRACTURE.

BY JAMES E. MOORE, M.D.,

*Surgeon to Northwestern and St. Barnabas Hospitals,
Minneapolis, Minn.*

In December 1891, Mrs. W., aged thirty, was sent to me by her family physician, on account of a crippled foot, which was the result of a runaway accident occurring about six months before. The foot had been caught between the spokes of a wheel

and twisted in such a manner as to cause a fracture of the fibula about three inches above the ankle, and of the inner malleolus at its base. The ligaments about the ankle joint had also been badly torn.

Upon examination the foot was found everted and the heel drawn up. The bones had united so that a line drawn along the crest of the tibia fell two inches inside of the bottom of the foot. Where the fracture of the tibia had united there were sharp bony projections covered by skin of a dark blue color, and so sensitive that the patient could not wear a shoe. In the center of the plantar fascia was a very tender protuberance, so hard that it was believed to be a spicula of bone. The whole foot was swollen, blue, and so tender that no weight could be borne upon it.

December 26, with the patient under chloroform, I proceeded to relieve the deformity in the following manner: An Esmarch was first applied from the toes to a point just above the knee. After a thorough cleansing of the foot and leg with soap and water, ether, and bichloride solution, the operation was performed aseptically. No sponges or antiseptic lotions were allowed to touch the wounds.

The first incision was made in the sole of the foot over the tender spot in the plantar fascia. The hard elevation was found to be contracted and thickened fascia. The fascia was cut transversely and the superficial wound closed with fine catgut. The tendo Achilles was next tenotomized and the toes elevated. Extensive adhesions were broken up in the ankle, and all of the joints of the foot. An incision was now made over the projecting bony prominences on the inner malleolus, the periosteum elevated, and the bony points chiseled off. The periosteum and integument were separately closed with fine catgut. The next point of attack was on the outer side of the leg, where an incision three inches long was made and the fibula broken with an osteotome. The wound was closed as before. Finally, an incision was made along the inner side of the tibia and that bone broken with an osteotome about two and one-half inches above the seat of the old fracture. This wound was also closed with fine catgut sutures.

The foot was now placed in the normal position, a light dressing of bichloride gauze and absorbent cotton applied, and over this a plaster-cast from point of toes to knee. As soon as the plaster hardened the foot was elevated and the tourniquet removed.

For the first few days the patient had a slight rise of temperature, the highest being 100.2°. At the end of ten days the dressings were removed, when union by first intention was found throughout. A plaster dressing was again applied, extending above the knee. This dressing was removed after four weeks, or a little

over five weeks after the operation, when firm bony union was found to have taken place. The deformity had been completely overcome, and the position of the foot was everything that could be desired.

After the first three weeks the patient had been encouraged to walk upon crutches, and by the time the dressings were removed she could get about very comfortably. As soon as the dressings were removed I began passive motion, and ordered massage every day. At the very beginning of passive motion the foot was less sensitive than it had been just before the operation. The breaking up of the adhesions in the various joints had much to do with relieving the excessive tenderness. The patient was advised to bear as much weight upon the foot as possible, and when she went home seven weeks after the operation, she could walk nicely with a crutch and cane. Twelve weeks after the operation, she writes that she can walk about the house very comfortably without crutch or cane, but that she still needs help in walking any distance, on account of her foot and leg being easily tired.

The result is now perfectly satisfactory to both patient and surgeon.

A CASE OF EXCISION OF ALL BUT THE ACROMIAL ARTICULAR END OF THE CLAVICLE FOR SARCOMA, WITH UNUSUAL POWERS OF MOTION AS A RESULT.

BY GEORGE G. VAN SCHAICK, M. D.

Surgeon and Pathologist to the French Hospital, Instructor in the New York Post-Graduate Medical School and Hospital, etc.

Excision of the clavicle is an operation offering but little difficulty in itself, and has now been done too frequently to deserve of every case being reported. The unusual control possessed by my patient, after recovery from the operation, over the movements of his arm and shoulder, may however possess some interest.

The only element of danger and difficulty in such operations lies in the occasional large size of the tumors to be extirpated, and in the involvement of structures underlying the diseased bone, the removal of which necessitates careful dissection among large vessels, with possible wounding of these or of the pleura.

The patient was admitted to the hospital in September, 1890. He was strong and healthy and nineteen years of age. A tumor nearly the size of a hen's egg appeared over the junction of the sternal and middle third of the right clavicle, and had been

treated with horse-liniment in a rather heroic way, leaving a large and badly blistered surface over the site of the tumor. The patient had noticed the growth since three or four weeks only. In order to determine with certainty its nature I caused nitrous oxide gas to be administered, made a small incision over the tumor, and with a small trephine quickly removed enough tissue for a microscopical examination. This revealed a typical sarcoma.

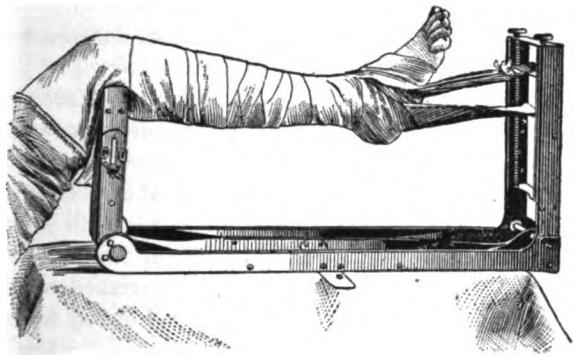
The next day the patient was etherized, and an incision was made over the whole length of the clavicle. The bone was then cut through as near the acromial end as possible with a Liston forceps. The proximal end was then raised to some extent with the lion-jaw forceps, and I proceeded to detach it from its attachments, with knife and raspatory. The bone broke, however, at the beginning of the diseased portion, from the tension of the forceps, though but very moderate force was brought to bear. The tumefied portion of the bone was soon lifted from its bed, turned over to the left side of the patient, and the ligaments were severed by cutting from the posterior aspect. A certain amount of tissue was then removed, where the growth seemed to have involved underlying structures. An antiseptic dressing was then applied after suturing the skin, and the patient placed in bed with his arm bandaged in the position used in fracture of the clavicle.

There was no febrile reaction at any time, and on the day after the operation the patient, during a moment's absence of the nurse, got up and was taking a walk through the ward when ordered to get to bed again immediately. The wound healed rapidly, and in a fortnight, having been allowed to go about the wards without any bandage to restrain arm and shoulder motion, I saw him, to my surprise, carrying a heavy pail full of water with his right hand, in evident enjoyment of the feat. I forbade such experiments, and on examination could see no limitation to the movements of the arm and shoulder. Neither was there any depression of the right shoulder. Some months after he left the hospital, in answer to a letter of enquiry he replied that he could use the arm with no trouble, and that he merely thought the arm was not quite as strong as the other. He promised to report in case he had any trouble or recurrence of the growth, and as I have not heard from him for over a year I fancy the result to have been a very good one. Before his departure I had planned some sort of an artificial support to the shoulder, but I was soon convinced that he did not need one. Such a result could of course not have been attained had the man not been a very muscular individual.

IMPROVED TRACTION INSTRUMENT FOR DRESSING FRACTURES.

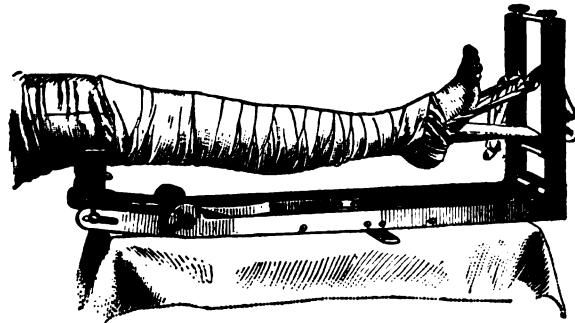
BY GEORGE W. KING, M.D., Helena, Mont.
Surgeon for the Montana Co.

Since the publication of my article entitled "Convenient Method of Applying Plaster of Paris Dressing in Recent Fractures of the Leg," I have received many letters of inquiry from physicians, concerning the extension device therein described. The attempts by others to apply the principle from the directions given, have so far resulted in the production of cumbersome affairs that would very soon consign to



Apparatus applied for fractures below the knee.

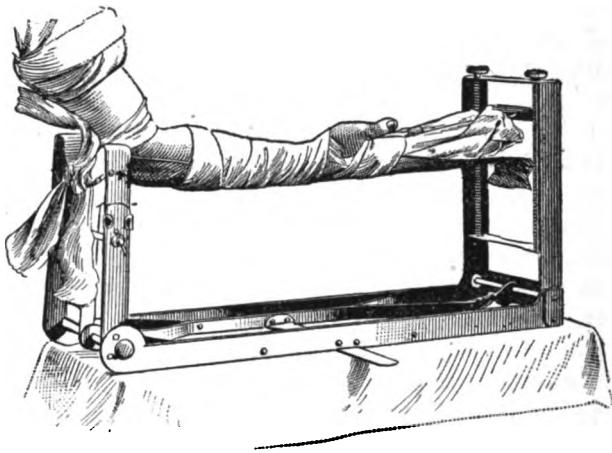
oblivion any discovery, however valuable. The difficulties of constructing a satisfactory machine without personal supervision are so great, that I have been compelled to continue my efforts, in order to prepare a model from which the instrument can be easily manufactured. In accomplishing this work, I am greatly indebted to Mr. E. D. Williams, of Marysville, Montana, for the able manner in which he has carried out the designs, and also to Mr. G. H. Robinson, the General Manager of the Montana Company Limited for his valuable suggestions.



Apparatus applied for fractures above the knee.

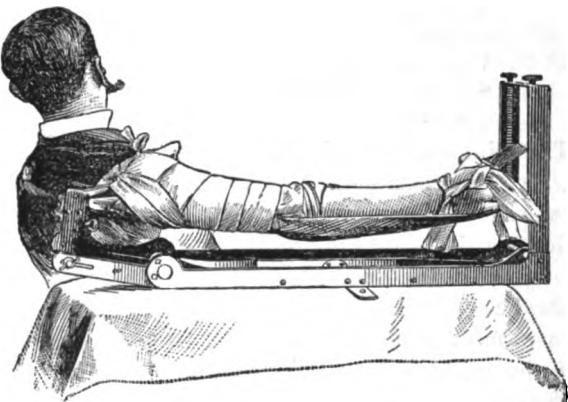
The improved instrument is constructed entirely of metal, nickle plated or japanned, and is especially designed for convenience and portability. When folded, it takes up but little space, and can be carried in a case adapted for the purpose. The latter contains also a small compartment for a few plaster

bandages or other dressings that may be desired. A sliding rule for accurate measurement of the limbs completes the outfit. Thus equipped, the physician is ready to undertake the reduction of any fracture single handed, and with satisfaction to himself and patient. Fractures of the arm and forearm may be treated by this method whenever the necessity for its use arises. Absolute fixation of a limb during the bandaging is, perhaps, the principal indication during the process. Unfortunately, this can be only approximated by the usual method employed. The



Apparatus applied for fractures below the elbow.

hands of an assistant are in the way, and the tension is usually varied whenever their position is changed. Muscular action promptly takes advantage of the slightest relaxation of the extending force, and thus displacements occur. I believe that the first dressing applied to a fractured limb is the most important of all, every detail should be carefully attended to, the fragments placed in the best position possible, for



Apparatus applied for fractures above the elbow.

after a week's retention in splints, the muscles of a limb become fixed and unyielding. But very little change can be affected in the position of the fragments after that time. It is true that exaggerated angular deformities may be corrected; but the lesser deviations, that in the final result are so annoying, should invariably be remedied before effusion takes place into the

muscles near the seat of the fracture. These considerations outweigh all minor ones in the treatment of fractures. I am well aware that perfect results are not to be expected in the most serious injuries. Any plan therefore, that facilitates the treatment of such cases, cannot fail to be of interest to every physician.

During the past year I have had ample opportunity to test the efficiency of the extension apparatus; and am well pleased with the plan. I no longer hesitate to apply the plaster of Paris bandage as a primary dressing in all cases that admit of any form of retention. Should the patient reside at a distance, and the limb be severely contused, it is well, as a matter of precaution, to take out a narrow strip from the anterior surface of the splint.

This can be readily done by applying a little nitric acid to soften the plaster of Paris before cutting. Two bands of elastic webbing should then be used to retain the splint in position, avoiding the danger of strangulation of the limb.

In the majority of cases this proceeding is unnecessary.

The accompanying engravings illustrate the changes that have been made in the instrument.

729 Eighth Avenue.

Cinnamic Acid in Surgical Tuberculosis.—Dr. A. Landerer has employed this remedy in 45 cases, of which 31 were cured, 7 improved, 1 unrelieved, 2 died, and 4 were still under treatment at the time of the report. In cases tubercular arthritis an emulsion of cinnamic acid was injected into the joints, the following formula being employed.

Acid cinnamic	5.0
Ol. amygdal	10.0
Vitelli ovi unius	
Sol. sodii chlorid (0.7 per cent.)....	
q. s. ut fiat emulsio.....	100.0

The cinnamic acid is first rubbed fine with the oil, then the fresh yolk of one egg is added; after these have been mixed together the salt solution is added in drops. The resulting emulsion has a strongly acid reaction, which before it is used must be neutralized by addition of a 25 per cent. solution of potassium hydrate. About 5 c. cm. is deeply injected and the injection repeated twice a week. In cases of fistulous processes a solution of cinnamic acid in alcohol (1 to 20) was injected into the surrounding tissues. If this was insufficient the foci were laid bare, curetted and tamponed with balsam of Peru gauze, or cauterized with cinnamic acid in alcohol. Frequent irrigation of wound cavities with the latter or with Peru balsam was also found of value.—*Wien. Medizin. Presse*, No. 11, 1892.

Clinical Department.

DOUBLE HARE LIP—OPERATION ON THE PALM OF THE HAND FOR EXTRACTION OF A NEEDLE—CHRONIC RHEUMATIC ARTHRITIS—FIBRO-ADENOMA OF THE BREAST.

BY CHARLES McBURNEY, M. D.,

Professor of Surgery at the College of Physicians and Surgeons, N. Y.; Visiting Surgeon to Roosevelt Hospital.

GENTLEMEN: I will show you in the first case that I present to you to day is one of the most perfect examples possible of a highly developed hare lip with cleft palate. You notice when you look at this case certain features that affect the prognosis and method of treatment to a very great degree.

In the first place, this child is under three months of age. The question of feeding is a very important point in these cases, both with reference to the manner of administering food and the taking of sufficient food to keep up nutrition. You will sometimes find a great difference in the case of two patients with hare lip, one of them being well nourished, while the other is able to take but little food owing to the malformation of the lip, and gradually wastes away. When you examine such a case you will notice that the fissure is double in front and perfectly symmetrical. Then you will notice a prominent intermaxillary bone, having to upper incisions, which projects very markedly forward and is attached towards the septum. You will also notice that the septum of the nose is in a very unfavorable situation, that is, the upper lip is completely lost, the whole structure being represented by this little bit of tissue that you see here.

If you look into the mouth of this patient you will see a very marked separation of the upper jaws fully an inch in width, and a very complete cleft running far back, with ulceration of the lower edge of the bone due to the action of the nipple of the nursing bottle. When it comes to the question of operative interference for the relief of this patient's condition, we have a good many things to take into consideration. In the first place, the child is very young. Any surgical operation is one of serious importance. Some of these cases die from hemorrhage alone due to the operation. The main point to be considered is whether the child requires an operation at all at the present time. Some cases absolutely do, and some do not, it being wholly a question of nutrition. If the child is thriving while being fed on the spoon, bottle or breast, then I never advise an operation until the age of three months has been reached. Different periods are selected by different operators, but as a rule, after the

age of three months, surgical interference is permitted. If you find that no method of nutrition will avail and that the child is wasting away on account of the mechanical trouble present, then, of course, operative measures are indicated, though the risk be great, and this operation consists in closing the anterior opening alone. If that can be closed, then the child will be able to take food and take it well. This is the only procedure that is called for at this early stage.

When it comes to a question as to what you should do in a case like this and what prognosis you should offer, you are very much limited. Although you can unquestionably bring these parts together in such a manner as to make a shapely and useful upper lip, you have some some difficulties to contend with and can never secure a perfect result.

The procedure to adopt in this case is to attack the vomer at its anterior aspect, separate the mucous membrane on either side, and take out a V shaped portion of the bone, so as to allow this part to slip back and close up the V. When that has been accomplished, then this portion of the upper lip and septum being separated from the bones, has to be freshened on either side and the parts approximated. This procedure requires a good deal of time and cannot be done hurriedly as the ordinary operation for cleft palate. When you have accomplished this you have done a great deal for the nutrition of the patient.

Surgical procedures, although comparatively perfect, are yet very liable in such an extreme case as this to fail on account of the tension of the parts. Very much more is accomplished by an artificial appliance than by any surgical operation on the deeper fissure. An appliance of metal or hard rubber will contribute very largely to the development and formation of the voice. So that nothing like a perfect result could be secured by any procedure that I know of in this case.

The next patient is a woman, forty years of age, who suffers from a condition which you will meet with very often in your practice. Three weeks ago, while scrubbing the floor of her room, a piece of a needle entered the palm of her hand, and she has what is very common in these cases an increasing pain, which often comes on late after the receipt of such an injury. Up to this time she has complained of no trouble, but she suffers at present from a great deal of pain. This pain is, I have no doubt, produced by a very slow inflammation that has been set up and which not infrequently results in a suppurative process extending up the course of the tendons. If this had not given rise to pain one would hardly be inclined to think that the injury was of sufficient gravity to justify operative interference. As, how-

ever, she complains of pain with more or less disability of the hand, an operation would be indicated sooner or later for the removal of this foreign body. If you begin to operate in a careless way in a case like this you will find nothing, and the blood and suffused connective tissue will confuse you. I have seen operations for extraction of a needle in the palm of the hand last an hour and nothing was absolutely found, yet the needle was still there. I would therefore impress upon you the importance of a very careful and systematic operation. It should be done under use of an Esmarch's bandage applied around the hand, and after the part has been emptied of blood, a free incision is made, under the most careful antisepsis. If you want to expose the parts satisfactorily, you should make a wide opening such as will allow you to inspect a considerable area. A very good way to do this is to cut away a square flap and turn it up, so as to uncover quite a large area, and by carefully examining this you will be very apt to find the needle. If you do not find it, take a clean needle and gently probe pushing through the tissues to see if you cannot strike the foreign body. This operation should be done as carefully and under as strict aseptic precautions as if you were performing a serious operative procedure.

The next patient is a man aged thirty-five, who has a tumor of considerable size which presents some difficulties of diagnosis. I find a very firm swelling situated on and connected with the right jaw. It is not tender to the touch, is about an inch in diameter and very firmly attached to the bone, but not to the soft parts. There is no history of injury, and the patient says this trouble has lasted for about six months.

In looking into this man's mouth I find no change in the mucous membrane of the cheek, but on feeling for the tumor I find it is attached to the jaw, overhanging its upper edge in the region of the molar teeth. What you will especially observe is the situation of this growth, which is more posterior than that of a necrotic process in the jaw connected with a carious tooth. I see a small opening in the growth which is significant, and it is possible we have to deal with an ordinary inflammatory process, though I find no signs of pus. A small fistulous opening exists on the inside of the jaw which discharges nothing but blood, and by the aid of a probe I can feel no dead bone. The mere fact that this opening exists; though it does not discharge pus, is suggestive of a chronic periostitis dependent upon irritative action at the root of one of the posterior molars and upon the presence of dead bone. As I have already said, I can feel no dead bone with the probe, and I am not at all sure as to the nature of

the trouble here. It may be a sarcomatous disease affecting the periosteum, or having its origin in the bone itself and involving the soft parts overlying it.

What is demanded in the diagnosis of this case is a careful examination of the swelling after an incision within the mouth. If a new-growth has been formed it means that excision of a considerable area of bone will be necessary. It is important then to make a positive diagnosis and this should be done, I think, from the interior of the cheek.

I show you next a case of more than usual interest. The patient is a man, fifty-one years of age, who some thirty-five years ago injured his right knee, but has been able to go about since the accident. Like a great many of these cases it is very difficult at times to obtain a history that will give you a clear idea of the nature of the various pathological processes that have transpired.

We find here a trouble beginning thirty-five years ago and originating in a distinct traumatism. The limb has been more or less useful ever since, but has been lately getting worse. You also see a considerable amount of deformity, with projection of the internal condyle, and the presence of some fluid in the joint. On handling the knee, quite a number of loose masses can be felt in different parts of the joint. This would suggest a rheumatic condition, affecting the knee joint and leading to such changes in its nutrition as to give rise to ossification of portions of the synovial membrane, together with thickening and even outgrowths at various points of the lower end of the femur or head of the tibia. Of course, such a condition results in much impairment of the mechanism of the joint. There is present here a large amount of interference with the power of extension and flexion, and the patient can bend his leg through an angle of only about thirty degrees. Altogether the joint is very seriously impaired.

The presence of the fluid would, of course, incline one to look upon it as a cause of the trouble, and treat the case by its removal. Though this treatment is proper enough where fluid is the result of chronic synovitis, yet in cases like this you will have to dispense with this procedure. These loose bodies represent only one part of an extensive change of the whole synovial membrane, the entire cartilaginous substance, all the ligaments and all the synovial fringes have been altered in structure. It is hardly possible by any single means short of a cutting operation to bring about a cure in this case. The question is, shall excision of the whole knee-joint be performed, which will give this man a permanently fixed limb, or shall we go still further and remove the limb above the seat of disease. This is a serious question to answer, but the age of the patient has a

great deal to do with it. If this man were thirty years old and the disease had existed only a few years, I should advise excision of the joint and bring about ankylosis. At this man's age, if I were in his condition, I would have the limb removed above the seat of disease and put an end to the trouble with greater safety than by excision.

The next patient is a young woman, eighteen years of age, who some two years ago sustained an injury to her right breast. She noticed nothing wrong, however, until a year ago, when a small lump made its appearance which she thinks has not grown much since then. During the past six months, however, it has increased more rapidly in size.

We have here a decided tumor, originating apparently from a traumatism. It is as hard to the feel as a mass of cartilage and is exceedingly movable under the skin and on the thoracic wall. It is free from tenderness, is somewhat nodulated, and the rest of the mammary gland is not involved. This tumor is a very characteristic example of a neoplasm produced either by injury or some change due to causes unknown to us, and affecting an isolated portion of the gland structure. This is what is known as a fibro-adenoma, is perfectly harmless and does not interfere with the function of the gland in the least. Nevertheless, such a swelling as this will occasionally undergo changes. After a number of years duration such swellings are apt to take on a sarcomatous or carcinomatous character, particularly if they are again subjected to traumatisms. For that reason, an operation is, I think, usually indicated. Another reason for operation is the very great importance to be attached to tumors of the breast in woman. A young woman like this, if she has anything the matter with her breast, will devote a large share of her attention to the trouble. Her friends may tell her that she has cancer of the breast, and if the patient gets this idea once firmly rooted in her mind no amount of persuasion on the part of a surgeon or physician can drive it out.

Now, in regard to the operation itself, do not make the mistake of removing the entire breast for a tumor of this kind, for it is only a short time ago that I saw this procedure resorted to in a similar case. The growth can be removed by an incision that will not mutilate the gland and leave no defect except a very slight scar on the outer surface. The incision may be made along the lower edge of the breast and away from the gland tissue, the skin being slightly drawn up until the edge of the tumor itself is exposed, when it can usually be shelled out with but little difficulty. The entire scar will then lie underneath the breast, leaving no defect in the external appearance of the gland.

**GASTRO-ENTEROSTOMY—SARCOMA OF THE CHEEK—
TUBERCULOSIS OF THE TESTIS.**

BY R. F. WEIR, M. D.

*Clinical Professor of Surgery at the College of Physicians and
Surgeons, N. Y., Visiting Surgeon to the New York
Hospital, etc.*

GENTLEMEN:—The patient I have brought before you has been subjected to several surgical operations. He is a man who has suffered for a number of years from gastric difficulties, and two years ago he was sent to me by a physician. His stomach was at that time so enormously dilated that it could hold ten pounds of fluid. He had a stenosis at the pyloric end of the stomach due to cicatrization of an ulcer at this place. Without going into further details of his symptoms the question was how to relieve this stenosis?

At that time there was much in vogue the procedure of opening the stomach and stretching the contracted tissue. When I came to investigate this operation I found that it had not only a heavy mortality, but in the cases operated on by the originator of this method, a distinguished Italian surgeon, re-contraction had taken place, so that the procedure had to be repeated. For these reasons I dismissed this operation and determined to resort to the widely accepted procedure of gastro-enterostomy.

After cutting through the abdominal wall, I made an opening in the stomach and another in the small intestine, sewing the two apertures together. In so doing I used what is known as Abbe's catgut rings. In this case I encountered the same trouble in the use of catgut rings which exists in all of these plate operations, and that is the edge of the incised stomach may slip out beyond the ring. You have to take especial pains to either stuff it between the plates or put an additional row of stitches between the plates after they have been sutured. In the use of plates of whatever description it is necessary to do more than insert three or four stitches, as Senn has advised, around the periphery of the plates, and it is advisable sometimes to suture them all around. Surgeons have now come to the conclusion that this is the safest course to adopt.

The majority of surgeons have abandoned the use of rings or plates not only for the reasons I have stated, but for the additional reason that much larger ones had to be employed than was at first thought necessary. Senn's plates originally measured three-quarters of an inch in their long diameter. It was soon found that when an opening three-quarters of an inch was made between the stomach and intestine this opening would close up entirely and the

patient be as bad off as before the operation. The same was true when the opening was made as large as two and even two and a half inches. So now, we make an opening three and a half inches in length and in the intestine as long as four inches. Even with this size there is a certain amount of contraction. When you have plates so large and long as this they are likely to do damage, or they may stretch the small intestine by reason of their size. Hence it has been concluded to dispense with plates, and the operation can be performed as rapidly without as with their use. The rapidity of the plate operation was due to the fact that it did away with circumferential sutures. There is now very little difference in time and the patients do very much better without them.

All went on well in this case after operation except that a small amount of sugar appeared in the urine, due probably to the handling of the pancreas. He convalesced rapidly and gained in flesh and strength. He left the hospital, but returned at the end of eight months complaining of a certain amount of vomiting, one of the symptoms he had before the operation. Four months later he again came back, complaining of the same symptom. On examining the patient I noticed that the wound made above the umbilicus had not healed perfectly, which had resulted in the formation of an umbilical hernia. Thinking his vomiting might be due to this, I applied a pad which kept back the hernia. A year later he returned to the hospital with the symptom of vomiting still persisting, and the thought occurred to me that the opening in the stomach might have closed again. Several surgeons have reported cases of closure of the gastric aperture in the course of six or eight months, and one case has been recorded where the closure had taken place in three months. It might be that this man had got back to his original condition. To determine this point I inflated the stomach with gas, and applied a stethoscope below the lower border so that the end of the instrument covered the intestine. I found that air escaped from the stomach and heard it gurgling in the small intestine. Hence I knew there was still an opening between the stomach and intestines. I washed out his stomach and he improved. He left the hospital and disappeared from observation until I heard that he was in Bellevue Hospital enjoying good health, with the exception of his vomiting a large amount of fluid and undigested food every other day, and some pain on the left side.

At the end of my air test experiment I came to the conclusion that he was suffering from dilatation of the stomach, that there was not sufficient muscular power in the stomach to force out its contents into

the intestine. For the relief of this condition I devised a plan which I thought at the time was original with myself. About a month ago I performed the operation. I reopened the original wound, pulled out the stomach and found it enormously dilated. I then stitched the greater curvature to the lesser curvature, inserting four rows of stitches. Since then he has been put upon ordinary food and complains no longer of vomiting or pain. The closure of the abdominal wound was accomplished thoroughly by silk worm gut sutures which were left in situ and buried beneath the skin.

I have said that this operation was original with myself. Two days, however, before I did this operation, in searching the literature on the subject, I learned it had been done four times by a surgeon in Switzerland. Several months after his operations he had an opportunity to make an examination of the stomach and found the diminution in size to persist in all the four cases.

There is one other thing I wish to say in this connection. If I were to do this whole thing over again I would not proceed as I have done in this case. I have said that the operation of stretching the pylorus was dangerous and unsatisfactory. There is another operation a pyloro-plastic operation, by which the pylorus is made larger. This has come into vogue within the past two years and has so far proved to be better than a gastro-enterostomy.

This little child, which is three years of age, has a large swelling of the face which is connected with the lower jaw. You notice there is a peculiar red, swollen appearance, and an escape of blood from the lower jaw when the tumor is touched or pressed upon. It is not very difficult to make a diagnosis in this case. This little patient has a sarcoma of the lower jaw which is not only growing outward, but is also growing inward on the floor of the mouth.

Now, a rapidly growing round cell sarcoma of this character, in a young subject is probably one of the most malignant things that we have to deal with. I should not advise any interference in a case like this, because not only is the operation an extensive one and attended with considerable risk, but the outcome is extremely indifferent. The disease is almost certain to recur and recur very promptly. I have done a great many of these operations and I have never seen a case that did not recur rapidly. Other surgeons may be more sanguine than I am of a cure.

These remarks about sarcomata in a young subject apply to similar growths elsewhere in the body. I can recall two cases where I amputated at the hip-joint for sarcoma in young subjects under three years of age. The patients all passed through the

operation safely, but recurrence took place in all within three or four months. The same remarks are applicable to sarcomatous tumors of the internal organs, such as sarcoma of the kidneys. It is very rarely that these patients recover from such operations, although two or three years ago Dr. Abbe, of this city, removed a sarcomatous kidney and the patient is still living.

The next patient is a man, forty-six years of age, who comes here for treatment of an irregular enlargement of the testicle, with areas of induration and softening adjacent to each other and extending to the epididymis. On examining the prostate I find on the left side a peculiar sunken condition and a number of irregular prominences. These are evidences of some previous disease of the prostate, and in all probability there was present a tubercular node which discharged itself either into the urethra or the bladder. From this you can readily understand that the tubercular process in the prostate has extended and involved the testis. The intervening tissues are also probably affected.

The mere removal of the testis is perhaps all we will do for him, but it is not all that surgery can do. We can remove all the diseased portions and attack the prostate and the vesiculae seminales by operations through the peritoneum. These procedures which are new promise much in the surgical treatment of these cases. I have learned a great deal of the possibilities of operations upon the bladder. Four months ago I operated upon a case of tumor of the bladder and found after making a suprapubic section that I could, with some little care, strip the peritoneum off from the bladder down to the vesiculae seminales. I was able not only to remove the tumor, but to cut away an inch of the bladder on each side all the way to the vesiculae seminales, and thus to get thoroughly beyond the diseased area. If necessary I could have done even more than this. One surgeon has extirpated the entire bladder, disposing of the ureters by implanting them in the rectum.

TREATMENT OF ABORTION—DISPLACEMENT OF THE UTERUS.

BY HENRY C. COE, M. D.

Professor of Gynecology at the New York Polyclinic; Gynecologist to the New York Cancer Hospital.

GENTLEMEN:—I wish to say a few words to you about the case we have now before us. It is an ordinary case and the treatment is an ordinary one, but still it is of a practical nature such as you come across in every day practice.

This is a case of abortion at six weeks. The patient aborted in the usual way, the entire products

of conception apparently coming away. It was thought by the attending physician that everything had been passed though she still was suffering a great deal from pain about the uterus. A few days later I was called to see her. It seemed to me that if the uterus had been thoroughly emptied of all its contents it ought to have contracted, for when a patient bleeds so profusely as to soil six or eight napkins in twelve hours, there is some foreign material in the uterus that should be removed. Some eminent authorities say that nature will take care of the products of conception, but I do not think it safe to trust to that teaching too implicitly.

I told the doctor that there was something within the uterus and that if the case were mine I would not be satisfied until I had introduced a dull wire curette and scraped it thoroughly. He thought he would wait and the next day a piece of placental membrane came away. Even then I did not feel satisfied and told him that it would be well to explore the uterine cavity. On examination the uterus was found antiflexed with the os pretty well dilated and discharging. The temperature was 101° F., and pulse 80 or 90. The rise of temperature without other constitutional symptoms was evidence to my mind that there was present some local trouble and not general sepsis. I insisted at once in exploring the uterine cavity. I put the patient on her side, introduced a dilator, passed in a dull curette and brought out a piece of decidual membrane as large as my index finger. I then washed out the cavity with a 1-10,000 bichloride solution and painted it with pure carbolic acid.

No rise of temperature followed this procedure, but the patient did not improve as she ought to have done. She had some pains about the uterus, the flow kept up profusely as before, and evidently there was something wrong. I called a few days later and now found on examination the uterus displaced against the rectum. That was explanation sufficient to my mind, for I was certain there was nothing within the uterine cavity. I therefore placed the patient in the knee chest posture, put the uterus in position, introduced a pessary and that was the end of her trouble.

Speaking of pessaries in this connection, I would say to you that it is just in this particular class of cases that they are indicated, and in which they will accomplish more good than in any other. In a case like this, the uterus is prolapsed for the first time. It is simply down because it is large, heavy and the supports have been temporarily relaxed. By introducing a pessary, after replacing the uterus, you will afford sufficient support that the uterus will in time remain up of itself.

In the case of an old chronic retroversion, of course, the condition is altogether different. In such a case a pessary maintains the uterus in position and a great many patients can wear them with advantage. I introduced a pessary in a case of this kind some four or five years ago, and the patient comes to me regularly now, feeling perfectly well. The moment the pessary is taken out, the uterus again drops down and she feels decidedly uncomfortable. I have told her that she must not expect a cure from the wearing of a pessary, but only freedom from pain or discomfort. The ligaments in these cases have been relaxed for too long a time and have lost their tone.

I certainly fail to see how any thoughtful man can dispense with the use of pessaries entirely, for we have not yet reached that stage of surgery where we can promise an absolute cure of such conditions, nor if we had, would we find patients always willing to submit to an operation, since a great many of them are content to get along with the aid of a pessary.

Choledochotomy.—Prof. Küster reports the case of a woman aged 49, who had suffered for two years from attacks of violent colicky pains in the abdomen, recurring at intervals of four to six weeks and followed by jaundice. Gall stones had been frequently found in the feces. The patient was much exhausted and emaciated. Laparotomy was performed, an incision, 10 cm. in length being made parallel with and below the border of the ribs. The large intestine was connected with the lower border of the liver and the gall bladder by firm adhesions, which were slowly separated. The gall bladder was empty, but the common bile duct contained two calculi, which were extracted through an incision, 2 cm. long. The wound in the duct was closed by catgut sutures and a continuous silk suture. A tampon of iodoform gauze was inserted and the greater part of the abdominal wound sutured. Five days after operation the tampon was removed, a fistula being left, which later gave rise to a severe hemorrhage, necessitating reopening of the entire abdominal wound. The fistulous track was curetted, cauterized and tamponed, and the patient now made a rapid recovery, the jaundice disappearing completely. The author recommends choledochotomy in all cases of calculi in the common duct, where the latter is accessible and the stone can be felt. The operation has been performed seven times (inclusive of two of the author's cases) with only one death.—*Archiv f. Klin. Chirurg.*, Bd. 43, Hft. 1, 1892.

Abstracts and Selections.

INGUINAL COLOTOMY IN RECTAL CANCER.

By DR. CARL EWALD, Vienna.

The author reports fifty-eight cases of inoperable cancer of the rectum treated by inguinal colotomy, in Professor Albert's clinic, with a mortality of 3.5 per cent. Except in cases requiring urgent interference the operation was usually performed in two sittings. The technique was as follows: After the customary antiseptic precautions an incision, 4 to 5 cm. in length, is made in the inguinal region, its center corresponding to the middle of Poupart's ligament. The abdominal muscles are then divided with a blunt instrument in the direction of their fibres, until the peritoneum comes into view. Hemorrhage is readily controlled by the application of two or three forceps to the cutaneous veins. The peritoneum is raised up in a fold between two forceps and incised, the margins being fixed by clamps. One finger is then inserted in the wound and the large intestine sought for in the iliac fossa. Protruding loops of small intestine are dusted with iodoform and returned to the abdominal cavity. A loop of the sigmoid flexure several centimetres above the abdominal wound is drawn out and its mesentery is perforated with a forceps, care being taken not to wound the larger veins. This opening is dilated into a vertical slit by a blunt instrument, and a strip of iodoform gauze 25 to 30 cm. long, is drawn through it, so that the flexure is suspended upon it. Two strips of adhesive plaster are applied externally over the gauze in order to prevent it being drawn down by the intestine. Finally a piece of iodoform gauze is inserted between the intestine and the abdominal wound. Iodoform is dusted upon the intestinal loop and a sublimate dressing applied.

This operation is performed under chloroform or cocaine anaesthesia and may be completed in from five to fifteen minutes. On the third or fourth day, or when necessary even earlier, the intestinal loop is partially opened with a Pacquelin cautery, or if it is much protruded the top is removed. The pains attending this procedure are trifling, and may be entirely prevented by applying a solution of cocaine to the gut. When the opening has been made gas and faeces are usually expelled spontaneously or after irrigation with tepid water. During irrigation the patient is placed over a tin pan two or three feet in length, one margin of which is much broadened so as to support his sacrum. By the use of this receptacle the wound can be rapidly and conveniently

cleansed, which should be done once or twice daily. On the eighth or tenth day the posterior wall of the intestine is divided with the thermo-cautery, a proceeding which may be facilitated by slight traction upon the iodoform gauze strip.

The operation, however, cannot always be performed in this simple manner. The most difficult part is the searching for the colon. Frequently it becomes necessary to enlarge the incision to such an extent that two or more fingers may be introduced into the abdominal cavity. The colon lies sometimes higher up, toward the navel, and care must be taken in drawing it out not to twist it. Usually the search for the colon is successful, and in none of the author's cases was it found necessary to use rectal insufflation of air.

If it has been found necessary to enlarge the abdominal incision, it is advisable after the gut has been extruded to diminish the size of the wound by a few serous sutures. Difficulty is sometimes experienced in drawing out the colon, which is due to its distension with faeces or gas, or to the infiltrated and contracted mesentery. The latter condition if highly developed may prevent the establishment of an artificial anus, so that the operator will have to content himself with the formation of an intestinal fistula. If, however, the cancerous infiltration has extended to the wall of the colon the artificial anus is best established at the transverse colon. Another difficulty sometimes encountered is the tendency of the protruded intestinal loop to draw back into the abdominal cavity. This is almost entirely prevented by the iodoform gauze strip, and was noted in only one of the author's cases. The gut was usually opened with the Pacquelin except in two or three cases where the scissors were used; two attempts with the elastic ligature proved unsuccessful.

In the performance of colotomy in one sitting an analogous technique is employed. The protruded loop of gut is incised with the knife at the apex between two forceps, and the inner tube of a tracheal canula is then inserted in the opening. The canula is firmly fastened in position, a long tube attached to it, and an antiseptic dressing applied. On the fourth to the sixth day the canula is removed, the opening enlarged and several days later the transverse division of the gut is completed.

The author advises inguinal colotomy in cases of cancer of the rectum which are too far advanced to be benefited by resection. It is indicated: 1. When metastatic processes can be demonstrated in the abdominal organs or inguinal glands. 2. When the tumor is immovable. 3. When the growth is situated at the level of the promontory of the sacrum. If the upper border of the neoplasm cannot be reached with

the finger however, extirpation of the rectum should not be at once rejected, but a careful examination should be made to determine whether the tumor has originated high up or has been spreading upward.

4. To remove the obstruction. In the author's opinion, however, we should operate early even before marked symptoms of stenosis are present. This should be done not only to relieve the constipation, but also the accompanying catarrhal inflammation, suppuration, and ulceration. These ulcers may produce hemorrhage and perforation, and it is probable that a not inconsiderable absorption of faecal constituents takes place from the ulcerated surfaces.—*Wiener Klinische Wochenschrift*, No. 9, 1892.

INTERMEDIARY TREPHINING IN OSTEOPHLEBITIS OF THE CRANIUM.

BY DR. O. REISSNER.

The author reports from Czerny's clinic at Heidelberg, five cases of osteophlebitis cranii in three of which trephining was performed, with one recovery. He calls attention to the fact that although the prognosis of the intermediary operation has been greatly improved by the employment of thorough antisepsis, it is not as good as that of the primary operation, because at the time it is performed the tissues are already in a condition of inflammation or sepsis. Intermediate trephining is indicated in two classes of cases: first, those in which septic inflammation already exists when the surgeon is consulted, a condition which might have been avoided by a primary operation or by strict antisepsis; and secondly, those in which owing to the trivial character of the wound immediate resort to surgical measures was not considered necessary. The object of intermediate trephining is to remove the cause of the fever and prevent extension of the purulent inflammation to neighboring parts, such as the sinuses of the dura.

According to Heinecke, acute traumatic ostitis cranii may arise several days after the trauma under symptoms of violent inflammation, but generally in a more insidious manner. The ostitis is more likely to arise if the bone has been stripped of its periosteum either by the traumatism or later in consequence of a purulent periostitis. In most cases there is simultaneously present a contusion of the bone. The pathological changes in the bone consist in a greenish discoloration which may be diffuse or circumscribed, this being caused by suppuration of the medullary tissue of the diploë.

The veins of the diploë are usually plugged with purulent matter. Owing to the slight participation of the bone substance in the process it would be more

correct to speak of the condition as a traumatic osteomyelitis, or better still osteophlebitis.

The clinical symptoms of osteophlebitis are those of pyæmia. If the disease follows directly a trauma fever is present at the commencement, but if it requires some days for its development the temperature may be normal or only moderately elevated. The wound at this time shows nothing abnormal. This condition of health is suddenly interrupted by the appearance of violent febrile phenomena, usually attended with a marked rigor. The subsequent course varies; some cases recover after the entire or almost entire thickness of the bone has become necrosed. In one of the author's successful cases, which was not trephined, an empyema, which developed some time after the injury, could be traced to an osteophlebitis following an incised wound of the skull. As a rule, an osteophlebitis does not run so favorable a course, the purulent thrombosis of the veins of the diploë extending to the sinuses of the dura and producing a sinus phlebitis. The inflammation may spread from the sinus to the meningeal veins giving rise to a purulent leptomeningitis or encephalitis. A purulent pachymeningitis may also develop, but this is usually circumscribed and limited to the immediate vicinity of the sinus. If, as usually occurs, an osteophlebitis is complicated by a sinus phlebitis and meningitis, little is to be expected from treatment. Under especially favorable conditions at the commencement of the disease, it might be possible that the meningitis is still circumscribed, and that an early resort to surgical measures might be of value. In the author's second case in which trephining was performed, the osteophlebitis which was due to a trivial wound of the skull was rapidly followed by a fatal sinus phlebitis, meningitis and encephalitis. The operation was done too late, as two days had elapsed since the initial rigor. In a third case which was trephined four days after the appearance of fever (17 days after the injury) death also occurred from purulent inflammation of the membranes. The fourth case also terminated fatally from purulent meningitis, the operation being performed seven days after the injury. In the fifth case trephining was resorted to twenty hours after the development of the rigor, and was followed by complete recovery.

As regards the method of operation the author advises the use of the chisel in place of the trephine, both on account of the form and extent of the diseased portion of bone. The operation should be performed as cautiously as possible so as to avoid the risk of breaking up purulent thrombi in the veins of the diploë by the shock inflicted. Inasmuch as the dead bone does not bleed we know exactly just how far to go to be sure that all the diseased parts are

removed, even if the area of discolored bone is not clearly defined ; we must encounter bleeding bone at every point of the circumference. Heineke is of the opinion that in cases where the diagnosis of osteitis can be made before the initial rigor the disease may be effectively combatted without the necessity of removing the discolored greenish yellow portion of bone throughout the entire thickness of the skull. He considers removal of the purulent diploë after resection of the external table as sufficient. Reisner, however, thinks it usually advisable to extirpate both tables with the chisel. If this is not done infectious matter might be left in the vitreous table and conveyed to the brain membranes, thus destroying the utility of the operation. It is therefore advisable to extirpate the internal table as a matter of prophylaxis. Aside from this a complete opening into the skull permits of an inspection of the brain membranes. The external layer of the dura is sometimes found separated from the bone by an accumulation of pus, but this is unusual, and if pus occurs at all on the inside of the bone it is only in a thin layer. The slight tendency of a pachymeningitis to become diffuse is also in favor of the success of an operation, provided it is undertaken before the other membranes have been affected by the inflammation.—*Beitr. z. Klin. Chirurg.*, Bd. 8, 1892.

THE SURGERY OF THE OESOPHAGUS.

BY ARPAD G. GERSTER, M. D.

The author relates seven cases of foreign bodies in the oesophagus, in three of which oesophagotomy was performed, while in two he was obliged to practise laryngo-fissure on account of extensive perichondritis caused by penetration of foreign bodies from the oesophagus. His remarks which are of great practical value, are as follows :

In reviewing the vast material presented by George Fischer, we unhesitatingly come to the conclusion that, if a foreign body becomes lodged in the oesophagus and cannot be displaced downward into the stomach or extracted without the employment of much force, it is imperative to perform external oesophagotomy at once. With the exception of cases in which a goitre or cervical tumor impedes the otherwise simple steps of the operation, the procedure, as now practiced, is comparatively safe, its rate of mortality for all cases, recent and old, good and bad, being computed by Fischer as twenty per cent. The conditions are parallel to those existing in strangulated hernia. *An early operation is safe; a late one dangerous and very often useless.* Delay extending over twenty-four hours is never justified,

and if at the end of this period extraction by bloodless processes is not easy, the gullet ought to be cut at once.

Tedious and often-repeated attempts at dislodgment, in a case where impaction has been present for more than twenty-four hours, are apt to be more dangerous than oesophagotomy. The patient's general condition is usually bad from fever and starvation, and the depressing effects of the manipulations in the fauces and oesophagus, productive of nausea and vomiting, are not to be slighted. Finally, the further injuring of the mucous membrane in the presence of septic ulcerative processes or sloughing, and the probability of causing *traumatic perforation*, are to be well weighed.

As regards the technique of oesophagotomy, the following points have to be observed : The incision should be ample, to permit comfortable operating without the employment of much traction and bruising of the organs exposed. Blunt methods of division are to be shunned, as torn tissues are not so viable as cut ones and are apt to succumb very easily to septic influences that may proceed from an ulcerating or sloughing oesophagus. The incision should be just in front of and parallel with the anterior border of the left sterno-mastoid muscle, beginning a little below the level of the cricoid cartilage and extending to the sternal insertion of the muscle. The omo-hyoid is drawn aside, and the lateral margin of the thyroid gland is exposed to serve as a guide. The large vessels should remain undisturbed within their common sheath, and are to be drawn backward and aside, together with the sterno-mastoid. Dissection should proceed between two mouse-tooth forceps. Thus vessels crossing the tract of the incision can be recognized and secured before being cut. Should the sternal portion of the sterno-mastoid be in the way, it may be cut also. The recurrent nerve must not be injured. The oesophagus can be recognized by the longitudinal direction of its fibers, or, if this is difficult, by protrusion practised with a metallic catheter or urethral sound from within. It is incised between two small, sharp retractors, and fillets of silk are passed through the edges of the cut, by which manipulations within the viscous are made much easier. In the absence of septic complications—and this may be fairly expected in cases receiving early attention—the edges of the oesophageal wound should be stitched at once with fine silk. The outer wound is to be packed loosely with iodoform gauze. A few silkworm-gut stitches may be inserted into the cutaneous edges of the wound, which, however, is to be closed only after the removal of the packing. In these cases alimentation by the mouth can be commenced at once with

liquid substances, and the patient should swallow very small quantities and while lying on the right side. Minute leakage will often occur, but will not interfere with the rapid healing of the wound. In those cases where ulceration or sloughing has occurred, suture is often impracticable and rarely safe. The open method by packing is in order, and large defects may necessitate the use of the stomach-tube, which can be inserted through the wound or by the mouth or nares.—*New York Medic. Journal.*

GASTROSTOMY.

In an exhaustive article on this subject, Professor Senn, presents the following practical conclusions:

1. Gastrostomy is indicated in all cases of cicatricial and malignant stenosis of the oesophagus and cardiac orifice of the stomach as soon as a sufficient quantity of food cannot be introduced into the stomach by simpler measures *per viam naturalis*.

2. Gastrostomy for malignant obstruction on the proximal side of the stomach, if performed at a time when the patient is sufficiently strong to survive the immediate effects of the operation, is a comparatively safe procedure and adds from a few weeks to six or eighth months to the patient's life.

3. In the treatment of impermeable cicatricial stenosis of the oesophagus, gastrostomy not only furnishes a new inlet for the introduction of food into the stomach, and thus prevents death from starvation, but it often proves a curative measure in such cases, as the gastric fistula can be utilized for another purpose—successful retrograde dilatation of the stricture.

4. The upper central part of the left rectus and the eighth intercostal space between the cartilages of the ribs are the most desirable points for the formation of the gastric fistula.

5. If the patient's strength warrants it, the operation should be done *a deux temps*, as it is safer to postpone opening of the stomach until firm adhesions have formed between stomach and the circumference of the external incision, than to establish the gastric fistula at once.

6. Fixation of the projecting cone of the anterior wall of the stomach in the abdominal wound is best secured by two long needles passed through the serous and mucous coats only, and suturing of the surface to the circumference of the wound.

7. Leakage from the fistula can be prevented most effectually by making the opening in the stomach small, by the use of an inflatable double rubber bulb through which the feeding tube reaches the stomach, or by making an oblique tunnel in the anterior wall

of the stomach as devised and practised with success by Witzel.

8. Solid food should first be subjected to thorough mastication and insalivation, when it is transferred by the patient from the mouth to a small funnel connected with the distal end of the feeding tube, from where it is made to enter the stomach by its own weight, by blowing it through the tube, or finally, it is aspirated into the stomach by the patient's sudden expiratory efforts.

9. Mastication of food, as a preliminary step to its introduction into the stomach, satisfies, at least in part, the sense of hunger, which is not always accomplished even by liberal exclusive gastric feeding through the fistula.—*Chicago Medic. Recorder.*

LAPAROTOMY UNDER COCAINE.*

BY EMORY LANPHEAR, M.D., PH. D.,
Kansas City, Mo.

Surgeon to University Dispensary, etc.

There are, many times, patients who require abdominal section yet who are in such physical condition as to almost absolutely prohibit the administration of either chloroform or ether. In such instances the surgeon may, without hesitation, make the operation under the effects of cocaine. The following is an instance:

Mr. W—, age fifty-two, patient of Dr. F. B. Wheeler, of Sawyer, Kansas, was admitted to the All Saints' Hospital suffering from a cancerous tumor of left side of neck, of very rapid development. Patient began to experience difficulty in swallowing about nine weeks ago, when his weight was 165 pounds. The dysphagia increased at an alarming rate and two weeks before admission to the hospital it became a matter of impossibility to swallow at all. Partial removal of the tumor was done by Drs. Wheeler and McCoy (of Pratt, Kans.), under local anaesthesia, it being deemed inadvisable, even at that date, to use chloroform or ether. There was very little improvement, so patient was brought to Kansas City to the hospital for further treatment.

When admitted he was *in extremis*—cadaverous, weight less than 80 pounds, and at the gate of death from starvation. Upon the evening of admission the abdomen was carefully scrubbed and shaved and a pad of moist bichloride gauze applied. At 9 A.M. on the following day, assisted by Drs. J. F. Binnie and T. B. Thrush (Dr. Sawyer standing ready to administer ether, if it should be required), I made a gastrostomy under local anaesthesia from cocaine. One-half dram of a 4 per cent. solution was injected in eight

*Reported to Academy of Medicine, March 12, 1882.

places into the subcutaneous areolar tissue along the proposed line of incision. As soon as the analgesic effect was established the usual operation was made, and without any pain or even sense of discomfort on the part of the patient. The only disagreeable symptom was a slight nausea when the left lobe of the liver was turned up to allow the stomach to be drawn up into the wound. The operation lasted twenty-two minutes.

How much longer the operation might have been prolonged without discomfort to the patient is a question of interest. But as a large number of the abdominal operations can be made within twenty minutes it is not so important as might at first be supposed. Besides the fact that the primary depressant effect of a general anaesthetic was avoided by the use of cocaine, there were two other points of much importance in this case, viz: the absence of the vomiting that nearly always follows chloroform or ether and especially the *absence of shock*. There was a total absence of anything like shock, and if this be found to be a general rule an immense gain may be made in sewing up stab or even gunshot wounds of the intestine (as well as in other numerous abdominal operations), by the use of local instead of general anaesthesia.

PULMONARY GANGRENE CURED BY A SURGICAL OPERATION.

BY DRs. CONSTANTIN PAUL & CHAS. PERIER.

M. D.—aged 58, in the beginning of June 1891, was attacked by a severe bronchitis, which soon gave rise to fetid expectoration. Auscultation revealed the presence of a focus of disease over the middle of the left lung, characterized by a large zone of very fine râles. The urine was normal. The use of terpinol and tinct. of eucalyptus did not prevent the progress of the disease, which presented the symptoms of pulmonary gangrene. There were present complete loss of appetite, chills and cold sweats, diarrhoea, and, on account of the increasing weakness, an early death was apprehended.

Antisepsis of the respiratory tract was practised by making the patient breathe air that had passed through a saturated solution of carbolic acid. The tincture of eucalyptus was also used, and the symptoms of gangrenous septicæmia abated rapidly, though the sputa remained abundant and purulent. There was evidently a portion of lung where respiration did not take place. The patient, however, improved rapidly and was able to go out and resume his business.

One month later, the sputa indicated the reappearance of the septic gangrenous process, and the treatment by antiseptic inhalations was again successfully resumed. After a relapse discharge of fetid pus took place by the mouth, at different periods, followed each time by a temporary improvement. In December, the symptoms of septicæmia became alarming and the urine contained 3 per cent. of sugar.

The point where cavernous sounds were most intense, being at the level of the second intercostal space, it was evident that the disease was intrapulmonary, and not the result of an interlobar pleurisy.

It was then decided to resort to surgical interference, and Dr. Perier was asked to operate. The difficulties of a posterior or lateral opening were such, that it was decided to attack the disease in front. In the middle of the second intercostal space a line was traced parallel to the ribs the centre of which corresponded to the most superficial point of the abscess. This centre was ten centimetres above the left nipple.

An incision ten centimetres long was made, and the pectoralis major and minor, the intercostal muscles and pleura were successively divided. The lung was seized with fine forceps and kept in contact with the parietal pleura. An incision with the knife showed that the pulmonary tissue was healthy. A Lister forceps was then thrust into the tissue in the direction of the abscess, until it reached the cavity, drawn out with the blades separated, so as to leave a free exit to the pus. After the evacuation of the latter a finger introduced into the wound at a depth of two centimetres penetrated into the cavity, at the bottom of which a round opening, evidently that of a bronchus, could be felt. The cavity had a capacity of about sixty cubic centimetres. It was carefully cleaned with a cotton tampon wet in a solution of chloral, one per cent., and afterward touched with camphorated naphthol. Two drainage tubes were inserted side by side and the wound closed; the air circulated freely through these tubes at each movement of inspiration and expiration.

The fits of coughing ceased at once, the odor disappeared from the sputa, the fever subsided, and the patient was more comfortable. Improvement progressed steadily, a few drops of camphorated naphthol being the only antiseptic used. Two weeks after the operation, the drainage tubes were replaced by a piece of salol gauze, and at the end of seven weeks, the wound had completely closed and the patient was restored to health.—*Bulletin de l'Académie de Médecine.*

Surgical Memoranda.

Perforation of Gastric Ulcer and its Treatment.—Drs. Simon and Baring (*Brit. Med. Journ.*) report two fatal cases of this condition, in one of which laparotomy was performed. In the latter case the ulcer, which was situated on the anterior surface of the stomach was sutured, but the patient died thirty hours after the operation. In view of the well-nigh hopeless prognosis of perforating gastric ulcers under medical treatment, operative interference is urgently demanded.

The Mechanical Treatment of Erysipelas.—Dr. H. Kroell recommends for this purpose bands of india rubber, 3 cm. wide and 2 m.m. thick, which he considers preferable to the strips of adhesive plaster recommended by Wolfier. In the employment of the rubber bands two points must be remembered : 1. It should be applied firmly enough to prevent extension of the erysipelas. 2. The circulation in the constricted part must be well maintained.—*Therap. Monatsh.*, No. 2, 1892.

Enterostomy in Intestinal Obstruction.—In a paper read before the Royal Medical and Chirurgical Society, March 8, 1892, Mr. James Greig Smith advocated operative evacuation and drainage of intestinal contents in cases of obstruction of the bowel where distension is a marked feature. He regarded mere over-distension of the bowel as a potent factor in the production of obstruction. According to the nature of the case, the measures adopted should be : (1) Simple evacuation of the contents with immediate return of the gut, or (2) evacuation with drainage of several hours or days, and subsequent closure and return of the gut ; or (3) evacuation with drainage that may be permanent. Anæsthesia should never be carried out while the stomach is distended with fluid ; the stomach should be artificially emptied, or the operation should be performed with the help of a local anæsthetic. Anæsthesia should be continued only for so long as is necessary to make the parietal incision and place the sutures.—*Brit. Med. Journ.*, March 12, 1892.

Craniectomy for Hydrocephalus.—Phocas (*Rev. des Mal. de l' Enfance*, Feb. 1892) reports two cases of this operation. In one case, a boy aged 11 months, the lateral ventricle was punctured and a hair drain introduced ; the child succumbed in five days from meningitis attributed to a failure in antisepsis. The other patient was a boy aged 25 months, the head was very large and the fontanelles ossified.

There was nystagmus and optic neuritis. The child appeared to be blind, could not walk or even sit up, and was very restless : A flap of scalp was raised, and a trephine applied about $1\frac{1}{2}$ inch above the external auditory meatus, the opening in the bone was enlarged to a diameter of $1\frac{1}{4}$ inch with a chisel and mallet. The dura was opened accidentally and a considerable quantity of cerebro-spinal fluid escaped, a hair drain was introduced and wound sutured. The wound healed by first intention, but fluid continued to drain away subsequently along the hair drain. On the eighth day the child was able to sit up in bed, there was no retraction of the head and it was no longer restless. When seen four months after the operation the child was nearly blind, but able to walk.—*Brit. Med. Journ.*, Feb. 27, 1892.

Treatment of Suppurating Compound Comminuted Fractures into Joints.—Dr. Halstead (*Johns Hopkins Hospital Bulletin*) would emphasize the following points in the treatment of these cases :

1. Excise cartilaginous surfaces, and thus avoid having dead walls for dead spaces.
2. Make free anti-tension incisions to relieve tension and to enable one to practise massage, the limit being protected by the Esmarch bandage.
3. Remove the Esmarch bandage temporarily to ligate the principal vessels.
4. Use as few and as fine ligatures as possible. Avoid tight and unnecessary stitches.
5. Disinfect the limb, protected by the Esmarch bandage, just before applying the dressing.
6. Apply the dressing before the final removal of the Esmarch bandage.—*The Times and Register*.

A New Method of Tenotomy.—The following are the steps of an operation which was performed in a case of post-hemiplegic contracture of the flexors of the fingers, by W. W. Keen, of Philadelphia. An incision was made, beginning just above the pisiform bone, and extending three inches obliquely upwards, its upper end being over the tendon of the flexor carpi radialis. All the flexor tendons having been exposed, each tendon was first split along the middle for an extent of one inch and a quarter, and then, at the two ends of this incision, section of the opposite halves of the tendons was made ; that is to say, the radial half of the tendon was divided at one end of the vertical slit, and the ulnar half at the other end. The long, loose ends of the divided tendon were then made to glide on each other in a vertical direction over a distance of about half an inch, and sewn together by two transverse sutures. The tendon was thus lengthened to the extent of three-quarters of an inch.—*Medical Age*.

Corrugated Paper in Surgery.—Dr. G. F. Cadogan-Masterman has on several occasions lately made use of this convenient packing material as a splint: for instance, in one case as "first aid" to a broken arm seen some distance from his house, and where a large piece of the familiar ribbing which had safely carried a bottle of liqueur by post, lying on a table, first suggested the new use for it. In another he employed it in place of the usual pieces of mill-board in putting up a leg with bones snapped across three inches above the ankle, and where it would have as much firmness with a quarter of the weight. On the field and in the equipment of travelers he is convinced it would prove most useful. As a flat splint he finds two superimposed pieces quite efficient for the wrist, but it is, of course, relatively stronger when rolled into a truncated cone or cylinder.—*Weekly Medic. Review.*

Injuries of the Foot.—Dr. G. W. Crile, of Cleveland, concludes a thoroughly practical paper as follows:

1st. That in open wounds asepsis is attained, if at all, more certainly through the employment of antiseptics.

2d. That unyielding splintings are not indicated in treating fractures of the toes. That the head of the second metatarsal bone is especially liable to suffer comminuted fracture.

3d. That in compound, even comminuted fractures of the tarsus, if in doubt as to the propriety of attempting to save the member, apply moist, warm antiseptic dressings, and await further indications. Suppuration should be the exception, if the case be well managed.

4th. Ordinarily, amputations between the junction of the lower and middle thirds of the leg and the tarso-metatarsal articulation should not be made. At all other points, save all possible.—*Medic. News*, March 12, 1892.

Penetrating Wound of the Brain.—Dr. Ernest Laplace reports the remarkable case of a boy ten years old, who fell on a broken fencing foil, the steel penetrating the left orbit between the inferior orbital ridge and the eye ball, without injuring the latter. When seen by the author five hours later there was coma, right hemiplegia, left facial paralysis, complete aphonia, respirations 30, temperature $104\frac{1}{2}$. An expectant plan of treatment was first adopted, but as the patient manifested symptoms

referable to compression from a clot at the base of the brain, trephining was resorted to thirteen days after the accident. A horse-shoe incision three inches long was made in the temporal region, down to the level of the zygomatic arch, and the tissues were lifted *en masse* from the bone. The trephine was rested on the middle of the zygomatic arch, and a three-quarter inch piece removed, consisting of the temporal bone and a small fragment of the sphenoid; the dura mater appeared very congested.

To reach the centre of the base of the brain for the removal of the suspected clot, a miniature egg-beater, consisting of four loops of platinum wire, had been improvised; this was perfectly malleable, and could be insinuated between the dura mater and skull without wounding the structures. Having reached the cavernous groove the instrument could be pushed no further; it was then turned on its axis for the purpose of catching the coagula in its loops. This was effectually done, and about a teaspoonful of clotted blood was removed piecemeal.

While dragging more out, considerable venous hemorrhage took place, most probably as the result of the removal of the clot that occluded the injured cavernous sinus.

The trephined opening was immediately plugged with iodoform gauze, and a graduated compress applied over it, secured by a tight bandage about the head.

Consciousness returned shortly after the operation, and the other symptoms gradually disappeared. The author emphasizes the safety of trephining near the base of the skull, the ease of arresting hemorrhage from the sinuses of the dura mater, and the importance of drainage in all cases of cerebral injury.—*Medic. and Surg. Reporter.*

On the Torsion of Arteries.—In connection with operations for excision of tumors, and other excisions of a like character, Jonathan Hutchison remarks as follows: "I may mention that for many years I have quite ceased to use any other means for arrest of arterial bleeding than torsion. In excision of the breast, for instance, I do not think that I have during the last fifteen years ever used a ligature. The torsion is always effected by a pair of Well's clamp-forceps, now in such universal employment. I am always extremely careful to close all vessels, keeping the wound exposed for a considerable time for that purpose. Very seldom, indeed, have I encountered any secondary haemorrhage."—*Archives of Surgery, Maryland Med. Journ.*

Antiseptic Memoranda.

The Treatment of Burns.—Dr. Capitan (*Médecine Moderne*, No. 5, 1892) recommends the application of the following ointment :

Salol	4.0
Cocain. mur.....	.25
Vaseline.....	30.0

After careful disinfection of the wound with solutions of boric acid or sublimate (1: 2000) and the opening of bullæ, the entire area is covered with a thick layer of the ointment. Over this is placed a dressing consisting of thin layers of cotton moistened in a 1 to 2000 sublimate solution and wrung dry, and then a piece of rubber tissue and a bandage. This dressing is changed every two or three days. If the wound has not become infected previous to the beginning of this treatment all pain and suppuration may be prevented by its use. The wounds heal with remarkable rapidity and the resulting cicatrices are delicate and scarcely visible.

Moist Dressings.—Dr. S. L. Weber, tabulates the valuable points of the moist dressing as follows : It reduces the congestion of inflamed parts. It restores the normal condition of the circulation. It therefore brings about again the normal nutrition of the diseased parts, and causes the prompt removal, or at least prevents the accumulation, of toxalbumins and ptomaines which are the immediate elements of danger. The further ravages of the bacteria are thus checked. The temperature of the inflamed parts is reduced to normal, and the pain is relieved. The raw parts of the wound are kept at the temperature of the body, retaining thus their full vital activity.

For the above reasons, healing, i. e. casting off of necrotic tissue and formation of granulations, begins much sooner than it would otherwise. It is a perfect method of drainage. Change of dressing is almost painless. Incipient inflammation about wounds may be aborted.—*Chicago Medic. Recorder*, April, 1892.

Absorbent Gauze Pads as a Substitute for Sponges.—Dr. W. E. Ashton recommends gauze pads as a substitute for flat sponges in all forms of abdominal and pelvic surgery. The pads are made of ordinary unsized absorbent gauze, two sizes being employed : a large pad, 9 inches square, which is used in abdominal work, and a small one, 4½ inches square, for pelvic cases. Each pad is composed of sixteen layers folded in such manner that the edges cannot fray. The large pad is made as follows : A single layer of gauze a yard square is folded at each

extremity upon itself, so that the folds meet at the middle. This makes two layers of gauze, oblong in shape, the extremities of which are now folded over so that they meet in the middle. There are now four layers and the shape of the pad is square. This is then folded on itself making again an oblong pad, having eight layers. Folding it once more upon itself, the pad is then composed of sixteen layers. To keep the pad in shape and the layers from becoming separated the edges are stitched together. The advantages of these pads over flat sponges are that they are inexpensive and can therefore be thrown away after they have done duty ; they are readily made and easily rendered aseptic. They remain well in place as they retain their shape perfectly and are much easier to pack about the seat of operation than sponges.—*Medic. News*, Feb. 20, 1892.

"Moose-Pappe" as a Surgical Dressing.—Moose-pappe as an absorbent aseptic dressing, says Dr. C. G. Campbell, of Saddleworth, England, is not as well known as its merits deserve. Moose-pappe (sphagnum, or turf-moss) has great absorbent powers, taking up twenty times its original weight. When placed in contact with a liquid, moose-pappe seizes the liquid ; its bulk becomes rapidly and enormously increased. The absorbed liquid does not lie on the surface or between the fibres, but is shut up within the capillary cells of the moss. Thus, though it is full of liquid, it does not feel wet, and, though it may be full of pus, it appears clean. Where with an ordinary absorbent daily dressings are required, the busy practitioner may safely leave his moose-pappe dressing two or even three days untouched, and will find, when he removes it, not a stink and a gush up of sealed-up pus, but a clean wound and no smell.

As a dry dressing the moose-pappe of Dr. Rodolphi is, perhaps, the most convenient. It can be rapidly crumbled on thin gauze (which is then loosely folded over it). Moose-pappe (Hagedorn), prepared in this way, makes a beautiful, soft, dry dressing for amputations or large wounds. As a moist compress for ulcerating surfaces, moose-pappe (Hagedorn), lightly dipped in a boracic or other antiseptic fluid, makes an ideal dressing, while, as a padding for splints, particularly in cases of compound fracture, or fracture complicated with flesh-wounds, moose-pappe will be found most satisfactory.—*The Medical Chronicle*, February, 1892, *Satellite*.

Dr. W. Gill Wylie says (*Amer. Journ. of Obstetr.*) that to introduce gauze into the uterus as a drain and leave it there for twenty-four hours is not a perfectly safe procedure. He employs for this purpose a good sized hard rubber drainage tube.

Correspondence.

"STRANGULATED HERNIA."

Editor, INTERNATIONAL JOURNAL OF SURGERY.

I was pleased to see in your last number a letter from Dr. Dallas, assailing the position I took the month before in regard to some of his statements on strangulated hernia. Discussion is always the promoter of improvement. His strongest point, however, seems to lie in the charge he makes against me of youth and inexperience. In answer I might make use of some such reply as Pitt made in Parliament, that "The atrocious crime of being a young man which the honorable gentleman has with such spirit and decency charged upon me, I shall neither attempt to retaliate or deny, trusting that I may be one of those whose follies cease with their youth, and not of that number who lack wisdom in spite of experience." But I realize that personalities have nothing to do with the discussion of a scientific subject, and hence will take no notice of them, consoling myself with the fact that I have had over thirty years in which to become reconciled to my youth, and eight of active practice in which to gather the inexperience Dr. Dallas kindly credits me with.

Dr. Dallas says that I condemn and criticize his treatment. I thought I did nothing of the kind. My very words are "We do not doubt the good effects of such treatment, and of taxis in hands that have become skillful." Now where is the condemnation, and where the criticism? I cannot for the life of me see them. I merely stated my opinion, to which I beg to adhere, that a fairly large number of cases will prove rebellious to it. Calling this criticism and condemnation appears to me the mistaking of a pin-prick for a stab-wound. Neither did I seek to cast any doubt on the good results obtained by Dr. Dallas. In his own article in the *Medical News*, the Doctor says: "Generally, within a half-hour the rupture has become flaccid, and gentle taxis reduces it." What does Dr. Dallas mean by generally? If he means invariably, he should have said so. If he means that some go considerably over the half-hour, it would have been interesting to know just how long. If he means that some cases do not respond to the treatment, then his experience agrees with what I theoretically assumed.

Dr. Dallas further says that he knows his method is not popular with young surgeons who are anxious to operate. This statement is probably true, but would have gathered much force if he had mentioned

a few from the long list of old and experienced surgeons who must by this time have adopted his method to the exclusion of others, in view of its success. If Dr. Dallas had told us how many cases he actually did treat by his method, what was their exact condition when he first saw them, and what were the exact results obtained, his statements would have had much additional value. The Doctor has stated that among 545 cases of strangulated hernia operated on, 260 died. I object to his statement that all would have recovered if submitted to his treatment, on the ground that many that are operated on are hospital cases, a large number of whom are in a well-nigh hopeless condition when admitted. If Dr. Dallas has not seen a number of such cases in his hospital practice, we must assume that his experience in the matter is more limited than we have reason to believe it is. I will only add that if Dr. Dallas' treatment increases the good results obtained in strangulated hernia by even a small percentage, he is a benefactor of humanity, and I doubt not that in this respect he is one. But I fear me much that senility and ripe experience will have reached me very long before I hear of 545 cases of consecutive recoveries in strangulated hernia treated by the method he advocates. I can assure the Doctor further that so far from condemning his method I shall faithfully try it at the earliest opportunity afforded me.

Yours respectfully,

GEO. G. VAN SCHAICK, M.D.,
228 West 34th St., New York.

TO OUR READERS.

We have recently received numerous letters from subscribers saying all manner of kind things about the JOURNAL. While it would afford us much pleasure to answer each one of these letters, time forbids, and we therefore take this opportunity to thank our correspondents collectively for these evidences of their approval, and to assure them that nothing will be left undone to maintain the high standard of this publication and make it a faithful exponent of the surgical progress of the age.

In our next number we will present our readers with a full account of the proceedings of the Surgical and Gynæcological Sections of the American Medical Association, which meets at Detroit in June. From present indications the meeting will be largely attended by prominent members of the profession from all parts of the country, and as in the past, the greatest interest will center in the Sections of Surgery and Gynæcology.

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Editorial Department.

NEW YORK, JUNE, 1892.

SYPHILIS AND LEGISLATION.

The recent discussion upon syphilis, at the Academy of Medicine, New York, touched upon a number of points of much interest to the profession and to the public at large. Dr. Bulkley, representing the older views of the malady, referred to syphilis as a constant menace to society, and mentioned an instance where one syphilitic woman had contaminated three hundred (!) men. He claimed that the duration of the contagious period varied with the character of the malady and the treatment instituted. In some countries syphilis was excessively prevalent. In Portugal, for instance, statistics showed the greater part of the population to be affected with it. He claimed that it should be included in the Contagious Diseases Act, and be under the control of the Boards of Health; that persons suffering from it should not be admitted to hotels; that keepers of brothels and hotels should be compelled to report cases of syphilis as they are now compelled to report cases of variola; and that failure to do so should be punished as a misdemeanor.

Dr. Keyes, on the other hand, represented the more modern view when he asserted that the vast majority

of those attacked late in life do not suffer much from syphilis, especially if their health is fair; and that the bad cases are those that neglect hygienic measures, drink to excess, and that have certain idiosyncrasies. The bad symptoms of acquired syphilis, he claimed, are those of the soil upon which it is implanted, malignancy or mildness depending on that factor alone. Gonorrhœa was a more dangerous disease than syphilis; its contagion was worse, harder to detect, and more persistent than that of the latter malady. Gonorrhœa killed more people than syphilis by stricture, cystitis, and kidney disease, or by metritis and salpingitis. These latter affections also destroyed population by causing sterility.

If legislation is desirable for venereal diseases, Keyes held that it had better be first applied to gonorrhœa. He believed that public indifference would prevent any such step being taken.

Dr. Sturgis also regarded the sequelæ of gonorrhœa as more dangerous than those of syphilis. It was not only futile to attempt legislation on these matters, but it would probably do more harm than good.

We agree very thoroughly with the views enunciated by Keyes and Sturgis. That syphilis is to-day a mild disease is proven by the very large number of cases in which undoubted late syphilis occurs without the patient's knowing anything of its earlier stages, and where mendacity can be excluded with moral certainty; by the multitude of cases of light primary and secondary syphilis which, treated and untreated, give no further evidence of their presence—not to speak of those apparent initial lesions in which the non-appearance of other symptoms leads many of us to reject the specific diagnosis entirely; and finally, by the small mortality directly traceable to syphilis, if we exclude those diseases of unknown causation for which syphilis forms a convenient etiological stalking horse. Compare the accounts of the sixteenth and seventeenth century syphilographers, or the syphilis of still virgin communities, as the Sandwich Islands, with the disease as we meet it in private practice to-day: the difference is very great.

There are, in fact, two ways in which a contagious disease may become less hurtful. Isolation limits the number of cases. The exact reverse of isolation—general infection—lessens its virulence. It seems

that the most suitable soil for the organism of syphilis is one in which it has not grown for generations. Here it displays its full vigor and its most disastrous consequences. Such soils were the Europeans of the middle ages; such soils are the inhabitants of isolated island communities to-day. The same holds good of the other exanthemata, to which class, and not to a separate venereal order, syphilis belongs. Witness the ravages of that comparatively innocuous disease, measles, among the inhabitants of the Shetland Islands.

The fact is, modern society is thoroughly "syphilized," though not in the sense of Anzias Turenne. The peculiar "using up" of the soil by one crop of the invading organism so plainly seen in scarlatina, smallpox, etc., seems as regards syphilis, to persist in a lesser degree even in the germ cell; so that the body developed therefrom is a less suitable field for the disease than is one that has grown from a cell that has never been submitted to these influences. We therefore agree thoroughly with Dr. Keyes, that the occurrence of a severe syphilis or of a mild syphilis is entirely a matter of soil. Not only have we no reason to believe that the invading agent differs in virulence in different cases, but on the contrary, there is abundant proof that one and the same virus may cause all the different gradations in severity of the disease. Hence, anything at all, heredity, constitutional diseases, vicious habits, etc., that tends to lower the vitality of the body cells, leaves them an easier pray to the virus.

As regards the control of the disease by legislation, it must not be forgotten that syphilis is a chronic and insidious malady lasting for years; that it rarely incapacitates the patient from attendance to his ordinary duties, and is not necessarily apparent to his neighbors; and that its occurrence, being usually due to irregular sexual intercourse, is looked upon as a reproach, and is concealed as much as possible. It is entirely impossible for the health authorities to keep every syphilitic under surveillance during the contagious period, which may last for more than two years. And it would be equally impossible to force any class of the community, either the patients themselves, or their medical advisers, or those who come in contact with them, to report such cases.

Only with people engaged in certain occupations, could it be partially carried out. We are heartily in favor of the registration of houses of ill fame, the regular medical examination of prostitutes, and the forcible retention of all sick ones in hospitals until cured of the sources of contagion.

Cigar factories should be inspected and the pernicious custom of using the teeth to bite off the end of the wrapper, and the saliva to finish the tip of the

cigar, should be rigorously prohibited. It was only shortly that Dr. W. T. Gottheil reported in the New York *Medical Journal*, two cases of chancre of the lip in cigar makers who employed this method. The same holds good for glass blowers and all avocations where the mouth is employed.

To carry this out alone is a task of appalling magnitude and it would attack but a small portion of the varied sources of contagion. With other cases of syphilis the State cannot have concern. It is impossible to subject the entire population to medical surveillance.

THE AMERICAN MEDICAL ASSOCIATION.

The past meeting of the American Medical Association was a pronounced success both from a scientific and social point of view. There were about one thousand members present, chiefly from the southern and western parts of this country. Everything possible was done by the medical profession of Detroit to promote the comfort of its guests and make their visit a pleasant one, and while the delegates were occupied with their work in the Sections their wives and daughters were taken in charge by the ladies of Detroit, and shown every attention. Much excitement was caused by the decision of the Judicial Committee in the case of those members of the Association belonging to the New York Medical Society. It is sincerely to be hoped that the committee newly appointed will find a satisfactory way out of the difficulty.

The meetings of the Section on Surgery were well attended, and the proceedings were ably conducted under the efficient management of Dr. Gaston, the Chairman. A large number of valuable papers were presented, but time did not permit of sufficient discussion to bring out the salient points of the papers read. This was a source of regret to many of the members who were anxious to discuss them. As Dr. Gaston justly remarked, a full discussion is frequently of greater importance than the paper which has brought it out.

The appointment of Dr. Hunter McGuire, of Richmond, as President of the Association for 1893, was received with general satisfaction, and is a graceful compliment to one of the foremost surgeons of this country.

With this issue of the *INTERNATIONAL JOURNAL OF SURGERY* we begin the publication of an *Australian Edition* under the management of the New South Wales Medical Transfer and Agency Company.

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Original Articles.

OPERATION FOR REMOVAL OF THE GASSERIAN GANGLION.*

BY EMORY LANPHEAR, M.D., PH.D.,
KANSAS CITY, Mo.

Neuralgia of the trigeminus sometimes resists all medication and becomes so severe as to make life a burden; no source of peripheral irritations can be detected; surgical interference becomes imperative. Extirpation of Meckel's ganglion has not proven satisfactory; and as removal of the Gasserian ganglion will certainly cure intractable trigeminal tic, its practice is justifiable.

There are three methods of reaching the Gasserian ganglion: first, the intracranial; second, by ablation of the superior maxilla and trephining the base of the skull; third, by opening the base of the skull through the pterygoid region.

Mr. Horsley has done the first operation by opening the middle fossa through the temporal region, incising the dura and lifting up the temporo-sphenoidal lobe, so that the base of the skull can be seen by means of an electric illuminator; he then cuts the root of the nerve as it emerges from the pons and following it through the dura mater (which here divides into two layers to cover in the ganglion) removes the ganglion from above. This, it seems to me, is an operation of great difficulty as well as severity, and besides the not inconsiderable compression of the brain necessary to expose the point of attack, must, in hands less skilled than Mr. Horsley's, result in more or less injury; and hemorrhage, of alarming degree, is likely to occur either from the contiguous sinus or the artery. Mr. Horsley's only case died seven hours after operation, presumably from shock.

The second method has been followed by Mr. Rose, in one case; the right superior maxilla was excised in the usual manner and the foramen ovale easily exposed; a disk of bone was removed and the ganglion extirpated; the operation was followed by a violent panophthalmitis, which necessitated enucleation of the eye; otherwise the operation was eminently successful.

The third mode is, I believe, the one to be preferred and will be followed in the case now being chloroformed. Mr. Rose has performed this operation four times (see *British Medical Journal*, Feb. 6, 1892) successfully, and Prof. Andrews, of Chicago, twice. In doing it one must be careful in two things: first, the ganglion

lying just above and external to the internal carotid artery, by a slip of the instrument, fatal hemorrhage may be incurred; Dr. Griffith will therefore stand ready to tie the common carotid in this patient, if necessary, while Dr. Binnie will assist me; second, since division of the fifth nerve through the ganglion, or of its branches in front, gives rise to destruction of the parts supplied by it, and subsequent death (see *Flint's Human Physiology*, subject, "The Trigeminus") the ganglion must either be totally extirpated or the nerve divided *behind* the ganglion.

The patient before you, James S., of Chanute, Kansas, presented himself about two weeks ago for surgical treatment of incurable facial neuralgia. He is fifty-four years of age, of good family history, of previous good health, non-syphilitic, and of strong constitution. For eighteen years he has suffered from trigeminal neuralgia, affecting the right side of the face. It has been progressive and for the past year has been so bad as to necessitate his remaining in bed; you see him pale and emaciated, and lines of pain upon his face. For the past five years he has tried all the new coal-tar derivatives and the anodynes have been exhausted in vain search for a remedy; morphine has no effect; his teeth have been extracted, but with no benefit. He has consulted rhinologists, neurologists, ophthalmologists, etc., without avail. When he was admitted to the hospital I prescribed:

B Quininæ hydrobromat. gr. 20.
Ferri sulphat. exsic. gr. 10.
Hyoscyamine sulphat. gr. $\frac{1}{10}$.

Misce et ft. pil. no. xij. Sig.: One every four hours.

This I did because Verneuil has said that no surgeon is justified in operating for any neuralgia, until he has tried hyoscymine. It did no good in this case.

The head and face having been carefully shaved, the parts are thoroughly scrubbed with soap and water, dried, washed with ether, dried, and washed with bichloride solution, 1-1000. The eye upon the affected side is irrigated with a weaker solution, and the lids stitched together with fine catgut; the ear is cleaned and packed with gauze; and the field of operation surrounded by bichloride towels. Commencing just below the outer angular process of the frontal bone, an incision is made along the upper border of the zygoma to its posterior extremity, and curving sharply downwards, descends just in front of the ear and over the parotid to the angle of the jaw, thence along the horizontal ramus to the vicinity of the facial vessels. This flap of skin is dissected up, care being taken not to injure the parotid, Steno's duct and the facial nerve. By making this incision, as Mr. Rose claims, there is gained a maximum of space with a minimum of disfigurement and no paralysis of the portio dura.

* Clinical lecture delivered before the post-graduate class of the University Medical College, March 29, 1892.

A long silk ligature is passed through the flap and held by an assistant, the retracted flap being protected by wrapping in bichloride gauze.

The periosteum is now stripped from the zygoma, and four holes drilled through the bone—two through the zygoma close to its roots, and two through the zygomatic process of the malar. These are about one-third of an inch apart and are to provide passage for silver wires to hold the parts in apposition after trephining. With a Hey's saw the zygoma is divided between these holes, the anterior saw-cut being directed obliquely downward and forward, and the posterior back as far as possible. The bone is turned down with the masseter muscle attached, care being taken not to injure the muscular attachment on the under surface through which future nutrition must come. The coronoid process of the inferior maxilla being thus exposed, the blade of a Liston bone-forceps is passed beneath it, and the bone cut through; no attempt will be made to restore the bone to its position, as the atrophy and cicatrical contraction might interfere with movements of mastication. The temporal muscle is turned up out of the way, exposing the pterygoids.

The external pterygoid muscle is separated from the skull by the periosteal elevator and drawn downward. Search is made for the nerve that it may be followed to the foramen ovale through which it makes its exit. This cannot be found, so dependence must be placed upon the bony landmarks. The base of the clean skull, in the hands of Dr. Thrush, is carefully observed and corresponding points located upon the patient. Having determined the probable location of the foramen ovale, a half-inch trephine is introduced, the center pin being driven in a little behind and external to the foramen. At the first stroke of the saw a gush of bright arterial blood appears; examination shows that the trephine has cut into the foramen spinosum as well as the ovale, and wounded the middle meningeal artery; with great difficulty this is secured and the trephining resumed. A disc of bone is removed and the dura cut with scissors. Nerve-tissue is seen, but whether it be the ganglion or not, cannot be positively determined because of the haemorrhage; however, it is seized with dissecting forceps and torn away, a curette introduced to thoroughly clean out the nerve-tissue and an attempt made to rapidly check bleeding, as the patient is beginning to show signs of shock. Haemorrhage having been arrested, the wound is irrigated with bichloride solution, the fragment of the coronoid process cut off with scissors, the temporal muscle tucked into the fossa, and the zygoma replaced and wired. As no drainage can be employed the incision is rapidly closed with a continuous catgut suture, the face

washed, iodoform dusted on very freely and a firm compress of bichloride gauze applied. The usual dressings are used.

Both eyes will be kept bandaged for four days and the one on the affected side for some weeks. If we have been successful in carrying out our design, we shall secure healing by primary union, so far as the external wound is concerned. And as for immunity from the terrible paroxysmal pain, we may expect the most gratifying results, if we may judge from the relief secured in the seven cases thus far operated on.

In reply to the question: "What effect will this have upon mastication?" I would say that the patient must necessarily do his chewing, henceforth, upon the opposite side, but as he has already done this for more than ten years, it can inconvenience him but little.

In conclusion, after a careful study of the operation, I must say I believe Mr. Rose to be correct in his assertion, that in all cases of epileptiform neuralgia of the trigeminus, where treatment has proven unavailing, extirpation of the Gasserian ganglion through the base of the skull is a somewhat difficult but not dangerous method of cure.

NOTE.—This patient made an ideal recovery. Shock was easily overcome. The temperature rose to $100\frac{1}{2}$ ° F. on the day following the operation—pure surgical fever—but rapidly declined. Freedom from pain was absolute. The appetite speedily improved and there was a gain of about ten pounds in weight during the two weeks that he remained in hospital. There developed a suppurative conjunctivitis upon the affected side, and it was feared that the eye might be lost. Treatment by irrigations with mild bichloride solution subdued it in about five days, and no further trouble was experienced. It is possible that it was the result of the introduction of the stitches into the lid, the conjunctival sac having been imperfectly cleaned. The patient was allowed to return to his home, 150 miles distant, on the thirteenth day after operation. He now claims to be the happiest man in the State of Kansas.

April 26, 1892.

EPILEPSY CURED BY THE TREPHINE.

BY ALEX W. REESE, M.D., WARRENSBURG, Mo.

The operation for the relief of epileptic convulsions, by the *trephine* is not a new one. In fact, from the very nature of the case in traumatic examples, at least, the idea of the probable cause is suggested at once; that is *pressure on the brain*.

Fracture of the skull, with depression, produces just such symptoms as we would be led to expect. If the injury is great we find profound coma, the abolition of special sensation, a struggling, slow, full, labored pulse, etc., etc.

In an injury of less gravity we might expect, and the fact is do see, convulsions, more or less severe, of an emphatically pronounced *epileptoid* character.

Now, in the former cases we know just exactly what is the matter and just exactly what to do. We know these symptoms are produced by *pressure on the brain*, and that when that pressure is removed, *ceteris paribus*, the symptoms, will vanish at once.

Reasoning, *a priori*, we would naturally be led to infer that epilepsy occurring either directly or remotely, subsequent to an injury of the skull, might be supposed to depend on that injury as the exciting cause.

This, in fact, has been the line of reasoning that led surgeons to resort to the *trepbine*, for the permanent relief of cases of this sort.

The earlier results of such operative procedures were not quite as favorable as the profession was led to expect. The first operation, by La Motte, in 1705, resulted only in partial success. Mr. Cline, of London, in 1804, reports a successful case. Dr. Dudley, of Kentucky, in 1828, reports five cases, three of which were successful. The elder Gross, operated four times with one cure and three deaths; in the fatal cases death occurred of *phrenitis* inside of the first week. Dr. Stephen Smith reports in the New York *Journal of Medicine*, for March, 1852, twenty-seven cases with only seven cures.

With these preliminary observations I will now proceed to the report of my case. About the 1st of November, 1891, I was consulted by the patient whose history is given below:

Joseph Boston, of Benton Co., Mo., aged 21, tall, (6 ft. 1 in.) slender, dark hair and eyes, of healthy parentage, eight years previously had received a blow, with an axe, directly on the top of the head and in the median line of the skull. The edge of the instrument cut entirely through the cranial bones, inflicting an extensive wound down to the meninges of the brain. The injury was accidental, being inflicted by one of a party of boys, engaged in chopping a rabbit out of a hollow log. He informed me that the wound healed kindly and did not stop him from work.

Four years subsequent to the accident he began to have "fits." These, I am confident from the description given by the patient and his friends were *epileptic* in their character. They continued to increase in severity, frequency and duration, until within the past six or eight months, when the paroxysms occurred two or three times each week, sometimes oftener, and lasted, not infrequently, twenty-four hours.

During these seizures he was totally unconscious of all that transpired about him. His friends, also, informed me that these paroxysms were very violent;

that it was with great difficulty he could be controlled.

An examination revealed a distinct *depression* in the skull at the site of the injury in the median line.

This fact, in conjunction with the history of the case, led me to conclude that the "fits" were the result, either of an *exostosis* or a *thickening* of the *bone*, at the expense of the *inner table*, thus causing undue pressure on the brain.

An operation by trephine was suggested, for the relief of the trouble. Dr. L. J. Schofield, of this city, being called in consultation, concurred in this view, and the patient and his friends heartily agreeing thereto, a day was set for the operation.

November 12th, we met and proceeded with the operation. Every antiseptic precaution was used as to instruments, sutures, dressings, etc., and all concerned in the work. The patient then being placed on the table, Dr. Schofield proceeded to administer the ether. When the patient was fully under the influence of the anæsthetic, I made a V-shaped incision in the scalp, of sufficient capacity to include the old cicatrix. This was dissected up, and the skull bone exposed. Using a large-sized trephine, I removed the disc of bone which, on examination, revealed an *abnormal thickness* of about *one-eighth of an inch* across one-half its surface.

The operation was done on Thursday, Nov. 12th, at 10 A.M. In order to control nervousness, we prescribed bromides and antikamnia. These measures seemed to have a good effect. He slept soundly the greater part of each night; his appetite was good and he was cheerful in spirits.

On Sunday, Nov. 15th, about 3 P.M., I was hastily called to see him. I found him in convulsions, wild, raging and uncontrollable. I at once administered chloroform and speedily controlled the spasms with this agent. In the meantime the incisions in the scalp had entirely healed by *first intention*, without the supervention of a single drop of pus, or one untoward symptom. He sat up most of the time, went out to the dining-room for his meals, and was cheerful and even jovial in his mood.

On Monday, Nov. 16th, he met with an unfortunate accident which, for a time, put a very grave phase on case. He had been walking about the room, and feeling a little fatigued, he sat down on the edge of the bed and then threw himself backward in order to lie down. In the act, he struck his head against the head board of the bed, receiving the blow immediately over the site of the recent operation. Great pain and tumefaction resulted, followed by violent delirium, elevation of temperature, and increased frequency of the pulse, reaching as high as 132.

These symptoms caused us no little anxiety of mind.

On Nov. 19th, after consultation, Dr. Schofield opened up the wound on one side. Finding the plate (a celluloid one) which we had originally inserted, completely thrust aside, and looking on it as a possible source of irritation, Dr. S., with my concurrence, removed it. Only one line of incision was disturbed. The doctor and I both visited him daily from that time until his final discharge.

The wound was mopped out daily with absorbent cotton, saturated with Marchand's peroxide of hydrogen. Iodoform was dusted into the cavity, a piece of antiseptic gauze, covered in with absorbent cotton, was laid over the wound and these dressings retained *in situ* by a roller bandage. He was kept on quinia, iron and the bromides, with an occasional Dover's powder at night, with the best results.

He was finally discharged, December 12, 1891, and from that day to this, three months, he has not had a single fit.

COMPRESSION OF THE CAROTID ARTERIES FOR THE TREATMENT OF EPILEPTIC SEIZURES.

By JOHN H. JAMAR, M.D., ELKTON, Md.

I have just received a copy of your valued journal and, among other interesting cases reported, I find one by Dr. Leopold Roheim, of Budapest, of eclampsia, treated by compression of the carotid arteries. This recalls a case that came under my care during the late war, whilst on duty as surgeon at Mower U. S. General Hospital, Chestnut Hill, in 1863, which was at first accidentally, afterward intentionally treated in a similar way. It was the case of a soldier, who had received a gun-shot wound at the battle of Gettysburg. The ball had pierced the cranial tables, injuring the dura mater near the juncture of the sagittal and coronal sutures, and was removed at the hospital in Gettysburg. When received into my ward I found so much exfoliation of bone had taken place around the edge of the wound, that it would not only admit the end of the index finger, but the pulsations of the brain were distinctly felt and seen.

One day, whilst at play in the ward with a comrade, he fell accidentally, striking the side of his head against the bedstead, which at first stunned him a little, but soon was followed by a violent convulsion. I was hurriedly summoned and soon after reaching him he had another severe seizure. To prevent him from hurting his head from the violent spasms of the neck and spinal muscles, I instantly seized him by the throat and pressed his head firmly to the floor, while an assistant held the lower extremities. The

spasm immediately ceased and the patient soon was conscious again. This surprised me. It was not long before there was return of the violent paroxysm and, concluding that the compression of the bloodvessels of the neck had contributed to the previous sudden suspension, I again made pressure over the carotids between the larynx and sterno-cleido-mastoid muscle with similar results. I was so struck with the novelty and efficacy of the modus allevandi, that I waited and permitted the patient to have two or three more seizures in order to make the test again, and the same satisfactory result followed. Believing the attack due to intensification by the fall of a pre-existent hyperesthetic condition of the cerebral structures consequent upon the traumatism, I gave him a hypodermic injection of one-eighth grain of morphia sulphate, first thoroughly evacuating the bowels by an enema. He was then placed on light diet and the use of nerve calmatives with no return of the paroxysms.

I have also resorted to the pressure treatment since, in cases of epileptic seizures, with the same results. The rationale of the treatment at the time was about in accordance with Dr. Roheim's. I have also tested the same treatment in violent attacks of neuralgia, when the pain has been almost intolerable, with very gratifying results. For the time instant relief was given and, although not permanent, the pain when it returned was much more moderate in degree. My reason for the experiment was the same as in the case of the epileptiform seizures. I think the subject well worthy of further investigation.

EMPYEMA FOLLOWING INFLUENZA IN A FEMALE CHILD AGED SEVEN YEARS. OPERATION; RECOVERY.

By O. W. BRAYMER, A.M., M.D., CAMDEN, N. J.

In the beginning of October, 1891, the patient, a bright little girl, suffered from an attack of influenza, mild in type, and after a few days treatment was apparently well. As far as could be learned all of the organs were in a normal condition and their functions regular.

On January 18, 1892, when called to the patient again, I was informed that for ten days or two weeks past, there had been no desire for play, appetite was poor, she was losing flesh, sleep was disturbed and she could only rest in a half reclining position on the left side.

Examination showed marked signs of empyema, viz.: there was a rapid pulse, elevated temperature, and a hectic flush on each cheek. On looking at

the thorax, the right side was characterized by its emaciated appearance, while the left appeared enlarged. There was a marked bulging of the intercostal spaces giving a swollen shape. The heart was displaced to the right, the apex beat being felt an inch and a half to the right of the sternum. There was dullness on percussion, difficulty of breathing, etc.

Aspiration was tried, the needle, a large one, being introduced midway between the spine and the sternum in the eighth intercostal space on the left side. Cocaine was the anæsthetic used. The pus was found to be so thick that only ten ounces could be withdrawn by this means. The exhaustion being great from this procedure, the patient was left until the following day, when a No. 12 (American scale) trocar and cannula was plunged into the cavity, through the former opening, and fully one quart of pus withdrawn. A double rubber drainage tube was introduced and the cavity left to drain. However, this was of no use, the lumen of the tube becoming closed on account of pressure from the surrounding parts. Therefore a silver tube, No. 12, made with a plate to keep the whole of it from being forced into the cavity, and for the attachment of tapes to hold it in place, was introduced instead of the rubber one. The cavity was washed out daily for eight weeks with a one to five thousand solution of bi-chloride of mercury, as warm as the patient could bear, followed by sterilized water to remove any excess of the antiseptic that might remain. No attempt was made to keep air from entering the cavity. The dressing used was a pad of iodoform gauze under the plate next to the integument, as well as several folds of the same material over the exit of the tube, all being held in place by a bandage. The tube was only removed when it became occluded with pus, and then when cleansed immediately returned. At each washing of the cavity the solution was injected until it came away clear.

From the beginning there was marked improvement. The febrile symptoms rapidly subsided and only returned, in any degree, when drainage became imperfect. To-day the patient is entirely recovered. At the end of two months, all discharge having ceased, the tube was removed and the wound allowed to heal.

In conclusion I can see no harm from the entrance of air into the pleural cavity in these cases. A rubber drainage tube, unless it were made of hard rubber, is of no avail. Removing the contents of the pleural sack, at intervals and not at one sitting, seems to be the best for the patient. There is no danger in the use of bichloride solutions, provided the residue is flushed away with boiled or distilled water.

SENILO GANGRENE TREATED BY MASSAGE

By W. H. TEN BROECK, M.D., PARIS, Ill.

I have but two cases to report, which are not enough to prove anything, but in view of the fact that few cases are seen by the general practitioner, and the disease is very fatal, would it not be well to compare notes?

During the winter of 1886, I treated a diabetic patient, nearly seventy years old, for senile gangrene of the distal two-thirds of the small toe of the right foot, and in the spring of 1887, I treated another diabetic patient about sixty years old, for senile gangrene of the small and second toes and part of the large toe of the left foot; the disease in this case also invaded the sole of the foot. Both cases recovered, the first perfectly, and the second with the loss of the first joint of the second toe and two joints of the small toe and all the flexor tendons attached to them.

Both patients have since died, the first from general debility, caused by large financial losses, and the other from heart failure, following la grippe, but in neither case was there a recurrence of the gangrene.

In the first case massage was kept up almost constantly for the first three days, then as much as was necessary to keep up the circulation. I had two good nurses who relieved each other.

The internal remedies were: codeine, salicylate of sodium, nux vomica and dilute phosphoric acid.

In the second case massage was kept up for about four months by an excellent nurse. I applied Peruvian balsam several times, but with that exception, the local treatment consisted of listerine and absorbent cotton.

The internal remedies used were: opium, nux vomica, and dilute phosphoric acid. I also gave digitalis for a few days, as the general circulation was very bad.

The patient said she had not been warm for three years, although she had spent one summer in Southern Kansas, and that on one occasion she had found a needle sticking two-thirds of its length in her arm, but had experienced no pain from it. The sense of touch was gone, and the skin felt harsh and came off in branny scales.

After the circulation was established and the skin became natural, sensation returned, and she was able to sew.

Whether senile gangrene is due to calcareous degeneration of the blood vessels, or to calcareous deposits which lessen their calibre, the result is always a lack of nutrition in the affected part. Now,

is it not reasonable to suppose that massage will do more than anything else towards effecting a cure?

I had our best physician called in to see these cases and he said I was foolish for attempting to save the lives of these patients except by amputation, and that I would be compelled to resort to it in the end. I was careful not to force gangrenous tissue into the circulation, but kept as near the dead line as possible. In the first case the part, although black, was not entirely dead, and I was not obliged to exercise as much care. I had some opposition from neighbors who wished to apply poultices, and said I was a fool for trying to cure a sore foot by rubbing it.

SURGICAL PATHOLOGY OF THE BONE-MEDULLA AND SPLEEN.

The following article was received without the author's signature. After holding it for a number of months we have decided to publish it on account of its value. If the author will send us his name we will be pleased to give him due credit in the July issue.

I propose in this paper to limit my remarks to the appearances exhibited in a few cases occurring in my own practice.

Hodgkins Disease (Anæmia Lymphatica).—The case which first attracted my attention to this interesting, but as yet comparatively unknown subject, was one of general lymphadenosis occurring in a male, aged 56. Enlargement, tenderness and hypersecretion of the parotid, submaxillary and sublingual glands, were the first symptoms apparent. The cervical and subcutaneous groups then became involved, while palpation proved that the mesenteric glands were also affected. Astenia rapidly developed, followed by coma, continuing forty-eight hours, interrupted by a brief period of semi-consciousness and ability to speak, succeeded by stertorous breathing for two or three hours, one severe general convulsion, and death. My attendance upon the patient had continued for somewhat less than three weeks from my first visit.

Pathogenesis.—A section of the spleen, which was somewhat enlarged, exhibited upon the cut surface numerous masses, varying in size from a grain of rice to that of a hazel nut, and presenting a grayish-white or drab color. The bodies appeared in lieu of the normal Malpighian corpuscles. My knowledge of the fact that a fracture of the tibia and fibula had been sustained some seven or eight years previously, led me to examine the side of the fracture. I found the normal medulla replaced by a red lymphoid marrow; and in order to discover whether this condition bore any relation to the previous injury, I examined the femur of the same leg and the tibia of the opposite side. The red or foetal marrow was present also in these bones.

Leukæmia.—This case was that of a married lady, sterile, and residing in a non-malarial region.

The enormously hypertrophied spleen filled the left hypochondriac, lumbar and iliac regions, encroaching largely on the epigastric and umbilical areas. A drop of blood from the finger-tip was examined microscopically. The color was remarked as less bright than that of healthy blood. The ratio of white to red corpuscles was judged to be 1 to 10. The white corpuscles varied in size from 1-1500 to 1-3000 of an inch in diameter, the former resembling the marrow-cell, the latter the lymph-cell. The patient lingered for some months, exhibiting no symptom worthy of remark, except increasing anæmia and asthenia.

At the autopsy the marrow of the sternum, os calcis and ulna respectively was examined. The most constant elements found were nucleated red corpuscles and crystals, known as Charcot's. In appearance the marrow from the several regions differed much less than in the normal condition.

The spleen was of a deep violet-red and presented adhesions to the abdominal wall. On section it was found to be firmer than the normal tissue, exhibiting the trabeculae clearly and showing no traces of the Malpighian bodies when examined with a power of 50 diameters. The organ weighed nearly ten pounds.

Osteo-Myelitis.—The autopsy in this case, one of chronic, circumscribed osteo-myelitis, revealed an extensive cavity in the head of the right tibia, the anterior wall being extremely thin and composed merely of a slight thickness of compact tissue, covered with periosteum and fibrous and cutaneous tissue. This region had, during life, exhibited marked pulsation. The finger introduced into the cavity distinguished the ragged remains of cancellated tissue and a tolerably firm coagulum partially adherent. The leg could be carried, with ease, in any direction, allowing itself to be brought anteriorly to almost a right angle with the thigh. The histological elements were giant-cells and granulation tissue.

The presence of the lymphoid cells and granular substance in the specimen, brought to the observer's mind, in a striking manner, the foetal marrow or that found in the short bones of the adult. We find them invariably in normal or abnormal tissues, in contact with bone undergoing absorption.* Virchow and Rokitansky hold that the lacunar cell is the transforming power in bone-absorption. Billroth asserts that the granulation tissue mentioned above is the agent of destruction or rather solution, and gives as an instance the effects produced upon ivory pegs used in operations for false joints. He claims that the granulations dissolve the lime-salts, by virtue of the lactic acid contained within their substance. Volkmann and Barwell affirm, on the other hand, that the granulation tissue is alkaline, and direct attention to the fact that the pegs are only occasionally eroded, and that sequestra withstand the

* Barwell.

process for long periods, while living bone is absorbed rapidly; concluding, therefore, that the process is a vital act.

Examination of the spleen in this case, revealed adhesions to the diaphragm and an increased volume. It exhibited a mottled appearance; the surface being marked by light grayish-yellow areas, separated by deep violet interspaces. The differently tinged areas were found to correspond to the external surface of pyramidal portions of the tissue which, owing to the peculiar distribution of the non-anastomosing* arteries of the spleen depended upon a single terminal vessel for their vascular supply.

At the point where this arteriole terminated in a leash of the terminal vessels, an embolus was generally apparent. The adjacent pulp-tissue, lying towards the external border of the organ, was of a dirty-white or yellow color in parts wherein sufficient time had elapsed to allow of the invasion of leucocytes. The violet-colored portions of the surface correspond to regions infiltrated with blood from the nearest previous vessel and possibly from the adjacent vein which, owing to its valveless† condition, permitted regurgitation of its contents.

Syphilis.—In examining the tibia of a patient who had suffered from tertiary syphilis, I found the usual gummatous material involving the medullary canal, while the compact tissue was redder and more spongy or lacunar than normal. The spleen was lardaceous or amyloid throughout. The surface of a section responded both to the iodine and methyl-violet test. Under a power of 250 diameters, the chief alterations were noticed in the trabeculae and walls of the venous sinuses. The capsule exhibited, scattered over its surface, light colored portions resembling in density cartilage, or even in some places, the calcareous plates found in the arterial walls in certain instances. This form of morbid change is not always diffuse, but may be confined chiefly to the Malpighian corpuscles, producing the appearance known as "sago-spleen." The presence in the same organ of the two forms of degeneration, namely, lardaceous and calcareous, would tend to make me adopt the views of Kieber and Virchow, which, while differing somewhat from those of Cohnheim, would appear more probable than those of Rindfleisch and Billroth, who adhere to the infiltration theory.

Myeloid.—In 1880, I examined the spleen of a man who had died from an immense myeloid tumor of the scapula. The organ was larger by at least one-half than in the healthy subject, was extremely soft, of a very dark color and gave way on very slight pressure, resembling, in fact, a large blood-clot rather than an organized structure. The prevailing cell noticeable was a large many-nucleated one, similar to that

found in the foetal marrow and the medulla of short bones and diploë of flat ones in the adult.

The question arises whether the multiplication of these cells was owing to an infiltration or to a transformation *in loco* and hyperplasia of elements normally present in the spleen.

Typhoid Fever.—I am not aware that any connection has been traced between morbid changes in the bone-medulla and the splenic hyperplasia which reaches its maximum at the height of the disease and diminishes with convalescence from enteric fever. I have, however, observed the sequelæ of periostitis of the tibia and ulna in patients who had exhibited marked symptoms of peri-splenitis; and have under my charge at present, a patient who recovered from a severe attack of typhoid about four years ago, and shows symptoms now of necrosis of the tenth and eleventh ribs, with osteitis of the eleventh dorsal vertebra. Splenitis was a marked symptom in the clinical history of this enteric attack.

Relapsing Fever.—According to Ponick * the most constant changes occurring in fatal cases of "Typhus Recurrens" are those affecting the spleen and marrow. Abscesses in the cancellated extremities of the long bones, especially the tibia, are found associated with proliferation and subsequent degeneration of the lymphoid cells of the medulla. Multiplication of the nuclei in the walls of the arterioles and fatty degeneration of their coats is another feature of the medullary pathogenesis.

Pyæmia and Septicæmia.—Globular bacteria have been demonstrated in the medulla and splenic tissue, as well as in the blood of those dying from pyæmia, whilst the rod (bacillary) forms are equally abundant in those tissues in septicæmic cases.

Glanders.—Both bone-medulla and spleen become affected secondarily in this disease. The specific microbe is particularly abundant in the latter organ.

Anthrax.—The morbid appearances in spleen and medulla in this virulent disease, are amongst the most constant—the tissues of the former swarming with micrococci and bacilli, while the normal fatty marrow is replaced by a yellow or greenish-yellow material occasionally of a tallow-like consistency and exhibiting the peculiar bacillus, although in less abundance than the great blood-lymph gland.

I have thus endeavored to call attention to some analogies existing in the surgical pathology of the spleen and bone-medulla, and while I have, perhaps, stated nothing particularly new, and refrained from propounding any startling theory, still the field is an extensive one, and further researches by skilled histologists are required to aid the physiologist in arriving at a correct solution of the mysterious conversion of chyme into blood, and the functions of the ductless glands.

* Virchow's Arch., Vol. LXXII, p. 154.

Clinical Department.

ERYSIPelas FACIEI—ONYCHIA SYPHILITICA AND RUPIA—CHANCER OF LIP—RODENT ULOER—GUMMA OF TONGUE.

BY WM. S. GOTTHEIL, M.D.

Lecturer on Dermatology, New York Polyclinic, Attending Surgeon, Class of Dermatology, North-Western Dispensary.

CASE I. The first patient that I show you to-day, is a male, aged 25. He tells us that three days ago a small pimple appeared upon the columella nasi, followed by a swelling that soon involved the entire tip of the nose. At the present moment he has a marked erysipelas extending over the bridge of the nose and both cheeks.

Erysipelas invariably starts from some focus of pus retention, in which the erysipelas organism has gotten, as well as the ordinary pus-producing microbes. It is frequently apparently idiopathic; but a careful examination always reveals a crust with pus under it on the head or in the nose, or an acne pustule on the face, from which the process originated. There is no idiopathic erysipelas. From the centre the erysipelas organisms spread through the superficial lymphatics of the skin.

A free opening and scraping out of such furuncles, softening and removal of such crusts, is, therefore, the first step in treatment. After that the old lead and opium wash is good; but far better is the use of ichthylol, either in a 10 to 20 per cent. ointment, or in an equally strong alcoholic lotion. Under this treatment the infection is cut short and the inflammation rapidly subsides. Ichthylol is an almost specific remedy against the erysipelas coccus. I expect the process in this case to be cut short in 24 hours.

CASE II. The man whom I now present to you has been suffering from syphilis for two years. He shows the effects of the poison on a debilitated organism. His right thumb and his left great toe are the seat of an onychia and a paronychia of great intensity. Both extremities are swollen, red, angry-looking, and very painful. The entire nail-bed of the thumb has been destroyed, and is represented by a suppurating surface. On the toe a small portion of the nail still remains. Besides this he shows upon his head and upon several places on the trunk and extremities, large ulcerative syphilitic ulcers covered with immense oyster-shell crusts—the well-known rupia.

Syphilitic onychia is rare, and occurs only in bad cases. The process begins as an ulceration at the margin of the nail, which gradually spreads until the entire bed is involved and destroyed. Notice that the skin of the finger remains unaffected.

The patient is sallow and anaemic. His appetite is poor, his bowels are torpid; he has been drinking to excess and leading a dissipated life. I cannot too strenuously impress upon you the fact that the difference between a syphilis, so mild as to be almost unnoticed, and one that destroys tissues and organs and ultimately kills, is simply a matter of the general health. Normally strong and vigorous cells are quite capable of coping with the syphilitic organism; weak and sickly cells succumb to it. Hence, in a case like this, treatment should be directed more to the general health than to the specific disease. Good and robust diet, exercise, warm baths, sufficient sleep, and no liquor, with bitter tonics, quinine and strychnine, are the essential elements of his treatment. By these means alone we may so improve his condition as to give his cellular elements a chance in the fight.

Besides this we will put him on a mixture containing 1-16 grain of biniodide of mercury and 15 grains of iodide of potash thrice daily. If the iodide disagrees, as it is very liable to do in a case which has a chronic catarrhal gastritis, as this man has, it must be stopped at once, as doing more harm than good. Mercury alone can then be tried, possibly in the form of inunctions or fumigations. Locally we will use an ointment composed of europhen, gr. 20 to $\frac{3}{4}$ i, which I have found very useful in these cases. The best results we can hope for, is the replacing of the entire nail-beds by connective tissue; a result which will give him a functionally unimpaired though delicate finger and toe.

CASE III. Here is a young girl who illustrates another feature of this protean disease. She comes to us complaining of a tumor of the upper lip which has been present one month. As usual in these cases, her history is negative; giving us another proof of the truth of the opinion that a syphilitic history should not be inquired into in doubtful cases, as being more likely to mislead than to guide.

The tumor is, as you see, a typical hard chancre; there is no possibility of mistaking this hard, dry, indurated nodule, which has the size of a large bean.

And in spite of her denials, there is, as you see, still present over her body, the remains of a general macular eruption; there is a general adenopathy, a specific pharyngitis, or, sufficient to remove all trace of doubt if any were present.

This is, of course, a most dangerous lesion as a source of contagion for others; the more so as the girl is a cigar finisher by trade, and completes her work, as they all do, with her lips and saliva. Each cigar of the thousands she has finished, and of the other thousands that she will finish, before the chancre disappears, is a possible source of syphilis for the unfortunate smoker. Nor do I know any way of

preventing it. She must work and, as you see, she is utterly incredulous as to the nature of her malady. We can only take the most energetic measures possible to cut short the growth of the chancer. Mercurial injections would be best; but our patients, even in dispensaries, lack the docility of the Germans, and I am sure that if I gave her an injection now, we would see her no more. We will, therefore, use inunctions of mercurial ointment, made with lanolin, which is more readily absorbed than the ordinary kind. We will push the remedy to the verge of salivation as rapidly as possible,

I will add in this connection that the lesion in this case is not necessarily of venereal origin. The girl may have contracted it quite innocently from a companion through a kiss, a cup, a lead pencil, etc.

CASE IV. The next patient is one who is well known in the dermatological and surgical clinics of this city. His entire left cheek and lower lid is involved in an ulcerative process of a chronic character. In the central portions scar tissue has been formed; but at the margins, extending down into the beard, and up to the external canthus, the process is actually progressing. The margins of the ulcerated area are raised, hard, of a whitish waxy color, and rapidly tend to break down. The disease has lasted eight years, during which time it has continuously extended, and it undoubtedly will continue to extend until the eye and the life of the patient are destroyed. It is a case of that superficial variety of epithelioma, known as rodent ulcer, and of course, only the most radical treatment offers any hope of success. This would involve ablation of part of the lower lid, with subsequent plastic operations to remedy the defects of tissue. This the patient persistently refuses to submit to. All attempts in the past to limit the extension of the growth by caustics, mineral acids, potassa fusa, etc., have only aggravated the condition.

Such being the case, we are reduced to the use of measures designed to mitigate the severity of the symptoms caused by the extension of the disease to the proximity of the eyeball. Sedative collyria and protective ointments are the limits of our therapeutic efforts.

CASE V. This man is an interesting case from a diagnostic point of view. Four months ago this patient noticed a swelling of the tongue, which gradually increased until it became difficult for him to retain the organ in his mouth. Pain was not present, and his only discomfort resulted from its size. A diagnosis of cancer was made and ablation of the diseased organ recommended. This the patient refused, luckily for himself, and nothing was done. At this moment, as you see, the tongue is so large that the

patient carries it habitually protruded from the mouth.

The entire organ is swollen and nodular, but chiefly along its central portion. The mucous membrane is entirely unaffected. From the absence of ulceration and of pain, from the rapid progress of the disease, and from the history of the case, I made a diagnosis of syphiloma of the tongue when I first saw the case two weeks ago. He was immediately put upon appropriate treatment, and the result, even in so short a time, has been marked. The tumor has diminished in size, the disability is less, and there is no doubt that the gummatous exudation will entirely disappear in the course of a few weeks at most.

This case illustrates the difficulty in the differential diagnosis of these two affections; but in case of doubt it is a safe procedure to put the patient on vigorous mercurial treatment to determine the nature of the disease.

An epithelioma takes months where a syphiloma takes weeks. Such a tumor as this, if epitheliomatous, could hardly develop in less than one to two years to its present size; whereas this disease dates back only ten or twelve weeks. In epithelioma the submaxillary and sublingual glands would, by this time, be themselves involved, whereas in syphilis the moderate glandular enlargement is simply that due to the general adenitis caused by the disease. Nor would an epithelioma have grown to this size without ulceration or pain.

Treatment has decided the diagnosis, and the patient's obstinacy has saved him from a useless and disfiguring operation.

CHRONIC SALPINGITIS — SUBINVOLUTION — THE UTERINE ELEVATOR IN THE DIAGNOSIS OF DISEASES OF THE UTERUS AND ITS APPENDAGES — PRACTICAL POINTS ON THE USE OF THE CURETTE.

BY H. MARION SIMS, M.D.,

Professor of Gynecology at the N. Y. Polyclinic, Visiting Gynecologist to St. Elizabeth Hospital.

GENTLEMEN:

The greatest essential to making a correct diagnosis of any obscure disease of the uterine appendages, or a correct diagnosis of any disease of the pelvic organs, is an accurate knowledge of the normal condition and exact position of these organs. When you are perfectly familiar with all of these essentials, the exact sensation to the touch, shape, and precise location of the parts, then, to make an accurate diagnosis is not a very difficult thing.

To make a diagnosis of the precise pathological condition in this case before us, is a comparatively

easy matter, because the abdominal and vaginal walls are thin. It is not difficult to map out the whole line of the Fallopian tube, to find the ovary and determine its precise size, shape and position. The diagnosis in this case is that of a long standing salpingitis, with cystic degeneration of the ovary and prolapse of that organ. What is the easiest way to find the ovary in a given case of ovarian disease? First of all, you must insert the fingers of one hand in the vagina, and place the other hand upon the abdomen, and get the uterus between the finger and the hand. After you have fixed the uterus, you introduce the finger into the left or right cul-de-sac of the vagina and slide it along until it comes to the tube, then by continuing this manoeuvre you will reach the ovary. In that way you will be able to map out the precise contour and position of the organ.

It not infrequently happens that the uterus is retroverted, and when you attempt to make a diagnosis by the sense of touch, you will find you are unable to reach the tube or ovary. It is for some reason or other displaced. The only way perhaps by which we can then make a correct diagnosis, is under an anaesthetic, which is not always convenient, and the patient may not be willing to take it. If we can devise a method by means of which we can bring the ovary or tube within reach of our fingers, it is well to do so. I have long employed the following plan for this purpose: I simply introduce a uterine elevator and throw the retroverted uterus into its normal physiological position by pressing firmly backwards towards the rectum with the instrument, thus bringing the tubes and ovaries within reach of the finger. I have been able to diagnose various forms of small ovarian tumors in this way and in no other. I had a case about a year ago where, on the left ovary, there was a distinct tumor and yet it was hidden up among the intestines and behind the uterus. It was impossible to reach it by the vagina or rectum. I introduced an elevator into the uterus, and the tumor, which was about the size of a lemon, was thereby thrown forward so that I was able to grasp it between my fingers placed in the vagina and over the abdomen, enabling me to make a ready diagnosis. The uterine elevator is also a very useful instrument in enabling us to make a differential diagnosis. I speak of this because of the great assistance it has afforded me in making, by its use, differential diagnoses between fibroids of the uterus and extra-uterine pregnancies, also in differentiating between fibroids of the uterus and fibroids of the ovaries. I will illustrate this point by quoting a case that has come under my observation. I saw some time ago a large fibroid of the ovary that had jammed the uterus up against

the abdominal wall. It was impossible to discover any line of demarcation between the uterus and the tube, and it was believed that we were dealing with a large fibroid of the uterus as no separation could be established between the two organs. As soon as I introduced the elevator within the uterus, however, it was easy to roll the whole mass away to one side and free the uterus entirely from pressure, thus mapping out the line of demarcation between them, showing conclusively that they were independent of one another. An operation was performed and the tumor proved to be a large fibroid of the ovary.

It will be argued in some quarters, that the use of a uterine elevator in cases of this kind is often dangerous and provocative of more harm than good. Of course, it is far from my desire to recommend the elevator in all cases for diagnosis in abdominal diseases; I simply advise its use in those obscure cases where the diagnosis is uncertain, and where you cannot reach and properly map out the uterus and ovaries, or whatever you have to deal with, without the aid of something else than the touch of the fingers. It is only in such cases that the use of the uterine elevator will prove of value: During all the time I have been employing this instrument in making diagnoses in obscure abdominal diseases, I have not seen a single case where the slightest harm was produced by its employment.

I have made these few remarks on the diagnosis of pelvic diseases, because the general practitioner frequently meets with cases of salpingitis, ovarian diseases or pyosalpinx, or in fact, any disease of the tubes in which the diagnosis is difficult, and it is well for you to know what instrument to employ so as to enable you to make out the exact condition present.

The patient before us is not, however, one of those difficult cases of diagnosis, as I have already said, and we find that she has a thickening of the Fallopian tube on the left side, with a uterus of about the normal size.

The treatment which I have been employing in this case is the application of boroglycerite tampons directly to the lateral cul-de-sac. And by acting upon the circulation through contact of the glycerine with the vaginal walls, this diseased condition of the tube has been greatly relieved. One of the most recent improved and conservative methods of dealing with diseases of the Fallopian tubes, consists in curetting and packing the interior of the uterus with iodoform gauze. This treatment I have often tried for salpingitis, and in the majority of cases I find it relieves the patient very considerably.

The next case I show you is an interesting one also. The patient is the mother of several children, the last one, born three years ago, being dead at

birth. Since the time of her last delivery she has been complaining of pain in the back and head, profuse menstruation, has a disagreeableropy catarrhal discharge which is constant, and has a good deal of other trouble. On making a digital examination of this woman I find the condition to be one of subinvolution, which has existed ever since the birth of her last child, and we have associated with this, as we have generally in all those cases, enlargement of the utricular glands. These have undergone fungoid degeneration, which causes the thick, disagreeable catarrh, with profuse menstruation, the patient complains of.

Of course there is only one form of treatment for this condition and that is the employment of a large, sharp curette. This instrument, I may say, plays as important a part in gynecological therapeutics as any instrument we possess, but it is one that must be used with a great deal of discretion. When used in a bungling manner it is able to do considerable damage. I may add in this connection that you hear a great deal of talk about the sharp curette being a dangerous instrument. In the twenty-one years I have been using it, I have not seen a single bad result following its employment in my hands. I use it without exerting too much pressure on the walls of the uterus, with a gentle and at the same time firm enough touch to remove any foreign body that may be present within the uterine cavity. It is unnecessary for me to add that any instrument used in the uterine cavity should be perfectly aseptic, and the vagina, vulva and labia, be thoroughly washed with a solution of sublimate. With this precautionary measure, this instrument is as safe a one to use as any other in any branch of surgery.

Curetting should be invested with all the dignity of an operation, and by this I mean that you should never apply the curette in your office and then allow the patient to get up and go home. Do this operation as you would any other important surgical procedure. Go to the patient's house or have her go to the hospital, dilate the uterus thoroughly under an anæsthetic, wash it out and put the patient to bed.

Again, never undertake a curetting without first putting the patient under an anæsthetic, because it is an extremely painful operation, and if you try to do it without an anæsthetic you do it imperfectly, and the result will be that she will be in a worse condition than she was in previous to its performance.

With these precautions this procedure is an easy one and you can perform it as well as any gynæcologist. It is well to remember one point in this connection, and that is, when scraping over an unhealthy surface you perceive no sound, but as soon as you reach the healthy tissue underneath the disease, you

get a rasping grating sound, by which you know you have removed all the morbid portion. By this means you can remove all the diseased tissues throughout the uterine cavity, and when you have done this you should then irrigate the interior of the uterus with a mild solution of boracic acid; and if it be a cancer or sloughing polypus you are dealing with, then you may use a solution of bichloride of mercury, or hydrogen peroxide of the strength of one part to three of water, following this up with packing the cavity with iodoform gauze.

By this means you will get the uterus so clean and thoroughly aseptic that you will be surprised to see how a case of subinvolution, such as we have on the table before us, will in three or four weeks respond to treatment. At the end of about four weeks this treatment can be supplemented by the application of boroglycerite tampons, or plain glycerine, which will complete the cure begun by the use of the curette.

TUMOR OF THE KNEE—IODOFORM INJECTIONS FOR TUBERCULOSIS OF THE HIP-JOINT.

BY ANDREW J. McCOSH, M.D.,
Visiting Surgeon to Presbyterian Hospital, New York.

The first patient is a man, twenty-five years of age, who has had for some years a small tumor on the upper part of the left knee. It seems to be variable in size, at times getting larger than at other times. It is at present about the size and shape of a flattened orange.

I am unable to arrive at a diagnosis of the trouble, and have settled down to the conclusion that it is either a lipoma or a bursitis. I have introduced the needle of a hypodermic syringe and have not been able to draw out any fluid. In addition to this tumor, on the upper aspect of the knee, he has also another and smaller one on the back of the knee, at the outer side of the popliteal space, apparently situated under the external hamstring muscles. If he had not the one above the knee I should be inclined to regard this second one as a bursitis. Exploratory incision into the larger tumor is the proper thing to do, whatever may be the nature of the trouble. If it be a lipoma I shall enucleate it, and if a bursitis, I shall dissect out as much of the wall as possible and then pack the cavity with gauze, and keep it packed until we get healthy granulation tissue.

I am not going to put on an Esmarch's bandage in this case, as after the bandage is removed you get considerable hemorrhage, which may prove very troublesome, and furthermore, this region is not a very vascular one. The operator then made a vertical incision over the tumor, cutting through the

fuscia lata down through the vastus internus, and almost to the bone. He then came upon a membrane, but was unable to tell whether he had opened into the joint or into a separate bursa, though it seemed to communicate with the joint. This was lined with granulation tissue at its upper aspect. Whether the material removed was tubercular matter or not, it was impossible to state until after it had been examined microscopically.

The whole serous lining over the upper part of the synovial pouch had a rough velvety feeling. The diagnosis, in the operator's opinion, was one of localized synovitis. Unquestionably the trouble started first in the joint. He would inject the cavity with a 1 to 40 carbolic acid solution, and then close the joint cavity and coapt the muscles over the joint with fine silk sutures.

The next patient was a girl, twenty-five years of age, whose hip-joint was injected twelve days ago with iodoform, for a tubercular disease. The pus was first evacuated with a trocar and cannula, and the cavity washed out with warm Thiersch's solution till the fluid was returned clear. Then iodoform was injected through the cannula, in the proportion of fifteen grains of the powder in a mixture of glycerine, passive motion being at the same time made over the muscles so as to bring the iodoform in contact with the wall of the abscess. The temperature was 102.5° F., before injection and the patient was in an extremely wretched and enfeebled condition. Since the injection was made she has improved very markedly. Last week her temperature was but 99.5° F. and she has improved also in other ways.

In bad hip-joint cases the patients do not progress as favorably after injection as this case has. This winter, however, a little girl entered the hospital in a very wretched condition with hip trouble. She has been injected four or five times with iodoform and now is in as good a condition as any one of the patients here. In cases where tuberculosis has advanced to a marked degree, where the cartilages are entirely eroded and the ends of the bones are in a condition of caries, iodoform injections have given very happy results. Of course, a stiff joint results in such cases just as after excision, but sometimes a better condition.

The rule in iodoform injections is that where there is no pus, simply evacuate the fluid through a large aspirating needle or trochar and cannula, and then inject your iodoform. If there is pus evacuate it, wash out the cavity with an antiseptic solution until the solution flows out comparatively clear, and then inject the iodoform. The iodoform is generally employed in the form of a ten per cent. solution in

glycerine and water, or with a certain amount of mucilage. At the first sitting you should not inject more than twenty-five or thirty grains of iodoform, for if you inject more than this, poisonous symptoms may be developed. Sometimes a distinct reaction follows the injection. The temperature generally goes up two degrees, and soon after comes down to normal and remains so. In some cases operated upon by this method here, there has been no reaction whatever, and the reason for this I do not know. It seems to be a peculiar idiosyncrasy of the patient to the influence of the drug. In the case of this little girl we used six grains of iodoform for the first injection, and the temperature rose to 104° F. The next time eight grains were employed and the reaction was not quite as great as in the first instance. Then I used ten grains and the last time fifteen grains, and, strange to say, after the last injection there was no reaction whatever. There seems to have been established a tolerance to iodoform.

The injections of iodoform should be repeated every ten or twelve days, and the iodoform emulsion should be sterilized before using. The best way to accomplish this is to keep it in a sterilizer for an hour or so previous to injection. I think iodoform injection is worth a trial in every tubercular joint disease. It cannot do any possible harm and a certain number of cases are unquestionably cured by its use.

Desirability of Operative Interference in Suspected Perforation of Chronic Gastric Ulcer.—In a paper read before the Royal Academy of Medicine, Ireland, Dr. Parsons pointed out what success has attended the combined efforts of physician and surgeon in other diseases, and expressed the hope that an early diagnosis would render perforative peritonitis amenable to surgical treatment. The paper was based on three cases of gastric ulcer which were admitted to Sir P. Dun's Hospital in the year 1891, after perforation had taken place. The first succumbed fifteen minutes after admission; in the second case symptoms of general peritonitis had set in some fifty or sixty hours before an operation was attempted, and she survived an exploratory laparotomy only eight hours. The third patient was operated on eight hours after the rupture had occurred, but owing to the site and nature of the perforation, excision was impossible, and the stomach could only be sutured to the edges of the wound. She lived for six days after the operation. The usual symptoms as perforation were deduced from these cases, and stress laid on the almost absolutely hopeless prognosis under medical treatment.—*Provinc. Medic. Journal.*

Proceedings of Societies.

AMERICAN MEDICAL ASSOCIATION—SURGICAL SECTION.

[FROM OUR SPECIAL CORRESPONDENT.]

The forty-third annual convention of the American Medical Association commenced its session in the Detroit Opera House at 11 o'clock, Tuesday morning, June 7, 1892, this being the third time the Association has met here. General Alger delivered the address of welcome to the delegates, followed by a few remarks by Dr. H. O. Walker, of Detroit, Chairman of the Committee of Arrangements. Dr. H. O. Marcy of Boston, President of the Association, then delivered the annual address, a carefully prepared and eloquent document, giving a resumé of the great progress made during recent years in medical and surgical practice. The business of the Association took up the balance of the morning, and the meeting adjourned at 1.30 P.M.

The different sections commenced work at 3 o'clock in the afternoon, meeting in different halls throughout the city. The *Surgical Section* held its meeting at Schwankovsky's Music Hall, on Woodward Avenue. The proceedings were opened by an address by the chairman, Dr. J. McFadden Gaston, Atlanta, Ga., on "The Surgery of the Gall Bladder and Ducts, including all Disorders of the Hepatic Organs, Ducts, Gallstones or other Neoplastic Formations, which lead to Occlusion of the Bile Ducts." He referred to his own papers which appeared in the *Annual* in 1884 and 1885 and other medical journals, which included the experience of others as well as his own. He expressed his gratification at the increasing interest that is shown in the subject, and stated that cholecystotomy is now performed by many. Incision and suturing of the common bile duct has now been done in twelve cases with only one death. In excising the gall bladder he insisted on the importance of leaving the adherent upper wall attached to the liver. In carrying out the anastomosis of the common bile duct with the intestine, the small bowel should be selected, preferably the duodenum, and never the colon. The formation of this anastomosis is much better than the old method of incising the gall bladder and stitching its edges to the parietal walls; a fistula is avoided and a natural secretion is preserved to the economy, while bile is prevented from passing into the peritoneum. The operation should be undertaken when any of the ducts are obstructed by gall stones or in traumatic cases, but not when the patient is weak.

Dr. W. H. Myers, of Fort Wayne, Ind., then read a paper on "Obstruction of the Cystic Duct, with a

Case." The obstruction may be dependent upon foreign bodies, impacted gall stones, or pressure. The bile is absorbed; the fluid in the duct becomes thin and glairy, and other changes follow. Violent pain is complained of, but we are only sure when a stone has passed. The pain is caused by the distension of the muscular fibres surrounding the duct. The cystic duct is not of great importance and the question is, is it better to perform cholecystotomy in these cases?

Dr. W. E. B. Davis, of Rome, Ga., followed with a short paper on "Peritonitis from Gallstones." The rapid fatality resulting from rupture of the gall bladder is well known. Recent researches have shown that this is not due to the mere presence of bile in the abdominal cavity, but to its constant and large flow, beyond the power of the absorbents to dispose of, and it puts the parts in a favorable condition to develop septic inflammation. Gall stones rapidly set up septic infection. Peritonitis may be simple or septic, local or general. The treatment is preventive. When we are sure of the presence of gallstones, they should be removed. The value of gauze packing has been abundantly proven by his own experiments. After removing the duct, pack thoroughly with gauze, and all danger of infection is obviated.

Discussion on these three papers was then opened by Dr. A. Vander Veer, of Albany, N. Y., who congratulated Dr. Gaston, on the importance and value of Dr. Gaston's work in the surgery of the gall bladder, and on the proud position he occupied both here and abroad. In the treatment of gallstones in general he was in favor of first trying medical treatment, such as olive oil, etc., but when that failed, then surgical treatment was necessary. In operating, he emphasized the importance of leaving undisturbed the adherent anterior wall of the gall bladder, and in performing anastomosis, of selecting the small bowel, preferably the duodenum. Jaundice is absent in the majority of these cases and pain is the important symptom. Some of these patients die from shock. The danger in these cases is from perforation. When petechial spots appear, the patient is beyond hope. The closure of a fistula, after the old operation, is not easy and Dr. Vander Veer was sure the difficulty is due to some obstruction in the duct.

Dr. Davis brought out some points. He showed that pure bile is not injurious and called to mind Dr. Keen's elaborate paper on the subject. The peritonitis which develops, is due to a beginning septic infection, a commencing abscess, or it occurs where aspiration has been tried. The fluid is not simply pure bile.

Dr. Marcy thought that Dr. Gaston's operation was only applicable in a limited number of cases and

that unnecessary delay should be avoided in all cases.

Dr. F. W. Ross believed that all agreed in the necessity of operating in these cases. The total removal of the gall-bladder is not necessary. The danger of making an opening too low down has not been spoken of.

Dr. Fenger, of Chicago, thought that in inflammations of the gall bladder, drainage should be attended to, and that it is safe to divide the operation in two parts rather than complete it at once.

Dr. Davis, in closing the discussion, again referred to the importance of the gauze packing. It makes the operation simpler and shortens it. It is easy to remove the stone, but more difficult to stitch the duct, but gauze packing prevents all danger of leakage.

The next paper was "Gunshot Wound of the Liver and Stomach—Recovery," by Dr. J. J. Jelks, of Hot Springs, Ark. The ball entered the back but there was no point of exit. When seen, the patient was in collapse, pulse weak and compressible, skin cold and clammy, and vomiting blood. Laparotomy was advised and accepted. Blood was found in the abdominal cavity but no injury to the stomach could be detected. On further examination, the lower surface of the liver was found to be lacerated and the bullet was discovered loose in the cavity. A glass drainage tube wrapped around with gauze was pushed into the wound in the liver to arrest hemorrhage, and the wound closed up. The patient recovered without further hemorrhage.

Dr. Gregory, of St. Louis, thought that the patient would have recovered without an operation, a remark which elicited quite a lively discussion in which many of the members joined, the majority endorsing Dr. Jelks treatment.

The last paper of the session was a report of "Eight cases of Esophageal Stricture," by Dr. D. S. Campbell, of Detroit, in all of which he claims to have effected a cure by the application of electrolysis. He condemned the use of bougies in these cases as being both dangerous and painful and also conducive to their development, while the employment of the electric current is both safe and reliable. He commences with 10 milliamperes applied daily for from ten to twenty minutes, gradually increasing the strength of the current to 25 or 30 milliamperes. In all the cases, a cure was effected within two months.

Dr. Newman, of New York, related the history of a case similar to the above, where a few applications produced a wonderful improvement in the condition of the patient, and he also spoke very enthusiastically of the remarkable results of electrolysis in such cases.

Wednesday was devoted to abdominal surgery. Dr. Dudley P. Allen, of Cleveland, read the first paper of the day, on "Intestinal Obstruction." He was followed by Dr. N. Senn, of Chicago, who delivered an address on : "A Clinical Contribution to the Operative Treatment of Acute Intestinal Obstruction," and gave the history of two cases. In the first he made a positive diagnosis of cicatricial stenosis of the stomach, but on opening the abdomen, no lesion was found there. Though greatly distended, the stomach was quite healthy. On further examination, the trouble was found to be due to an impacted gallstone, which had caused some local inflammation and a slight twisting of the pyloric orifice. In this case, there had been no marked pain and no jaundice. The vague pain occasionally complained of, was undoubtedly due to the localized peritonitis. In the second case he spoke of, intestinal obstruction was present, due to a gallstone, the size a of walnut in the bowel. For several years, the patient had given symptoms of gallstone, and on opening the abdomen the stone was found in the ilium, obstructing the bowel. In cases of intestinal obstruction from gallstones, we will always find perforation of the gall bladder, for stones sufficiently large to obstruct the bowel, cannot pass through the duct.

He then went on to speak of a peculiar class of tumors, desmoid tumors of the abdominal walls, tumors of the meso-blast. These growths originate from the sheaths of the abdominal muscles and greatly resemble a fibroma, but with unmistakable evidences of malignity—a fibroma with a sarcoma added. They are only found in child-bearing women and are claimed to be due to some muscular strain or injury during parturition. Clinically, they grow faster than fibromata. They differ also in their relations to the surrounding tissue, having no well-marked line of demarcation, and being strongly adherent to the skin and intimately attached to the peritoneum. This means an intra-peritoneal operation for their removal. The location of these tumors is in the recti muscles, then in the inguinal region, and next, in the costal arch. In the four cases in which he had operated, all the patients recovered without the occurrence of ventral hernia, although it was necessary to use the omentum to aid in filling up the deficiency in the abdominal walls.

The next paper was by Dr. Joseph Price, of Philadelphia, his subject being : "Intestinal Lesions in Abdominal Surgery."

Universal adhesions is the rule in pelvic troubles, and to have the best success in these cases, a thorough knowledge of their pathology and the history of their growth is necessary. The less the peritoneum is

meddled with the better, while half measures are worse than useless. Packing with gauze is bound to produce adhesions. We must know what to sacrifice as well as what to save, but no violent measures should be employed. Hemorrhage must be controlled, but not by ligature necessarily. In fact, ligation is rarely required. Hot water will remove all *debris* and check bleeding. We know that all abscesses forming here are either tubal or ovarian, but the treatment of these cases is often a travesty on surgery. He referred to an article by Dr. Munde on this subject, in the March number of the *Obstetrical Journal*, and criticised his treatment very sharply.

(At the conclusion of Dr. Price's paper, Dr. Gregory, of St Louis, made a motion that the remarks on Dr. Mundé should be expunged. This elicited quite a spirited debate, but the motion was voted down).

The afternoon session was held at the Opera House, and the first paper presented was on "The Comparative Merits of Inguinal and Lumbar Colotomy," by Dr. J. M. Mathews, of Louisville, Ky. He did not think that colotomy should be performed in many cases in which it is done; especially in cancer of the rectum if the tumor can be excised. It should only be performed in congenital conditions, occlusion, etc. Inguinal colotomy has now largely taken the place of lumbar colotomy, under the plea that it is much easier to perform, but this is not the case, and such reasons should have no weight with surgeons, who should be prepared to do the operation that is safest to the patient. The one, lumbar colotomy, is extra-peritoneal, while the other, inguinal, is intra-peritoneal. When there are two operations to accomplish the same thing, it is safer, even with antiseptics, to avoid invading the peritoneum.

Again, in operating in the inguinal region, we are dealing with a diseased condition, generally a cancer of the rectum and sigmoid flexure. If the colon is involved it seldom presents itself in this condition, but is usually found up towards the navel, so that it is necessary to enlarge the incision, and by doing so, you inflict a serious injury upon the patient. Again, the mesentery here is very short and it is difficult to establish an artificial outlet. In lumbar colotomy, on the other hand, you are entirely outside the peritoneum and the diseased condition can be got at just as easily. All the objections to lumbar colotomy have been so thoroughly met and disposed of by Mr. Bryant, that it is not necessary to refer to them here.

There being no discussion, Dr. Gregory, of St. Louis, read a paper on "The Significance of the Hernial Sac." Hernia is fraught with imminent danger and may come when least expected. Modern

progress has given a new impulse to early diagnosis, and to recognize hernia in embryo, is to anticipate all its perils. When developed it consists of a sac and contents, and exposes the patient to all the dangers of inflammation, irreducibility, incarceration, etc., etc.

All mankind is predisposed to hernia, for the abdominal wall is weak in all and the weak spots begin to bulge. The elongation of the mesentery may seem to have little effect, yet persons in whom hernia exists suffer more when their health is out of order. The most important period to relieve predisposing and exciting causes, is when weakness is felt and slight fullness is apparent. If the sac is allowed to form and become organized, strangulation is liable to occur at any time. The early diagnosis of hernia is easy. The symptoms only differ in degree. Unfortunately the surgeon too often only sees the case after the formation of the sac.

Dr. T. Schneck, of Mt Carmel, Ill., read a paper "On the Treatment of Injuries of the Abdomen not Requiring Surgical Operations," dividing them into first, cases where the parieties only are affected, and second, injuries in which the integument is unbroken, but where the internal organs are involved. Injuries in this region demand the closest attention, as the most trivial, apparently, may be followed by the most serious results. On account of the close connection between the cutaneous nerves and the great ganglionic centres within, shock is more pronounced and reaction must be promptly re-established. This can be most readily accomplished by the application of heat and the hypodermic injection of cardiac stimulants. Other symptoms must be met as they arise.

Dr. J. H. Manley, of New York, then read a paper on "Hernia, Operable and Inoperable."

It has been claimed that all cases of hernia are curable and manifold and various are the operations to effect the radical cure. Before operating we should weigh the consequences to the patient, of a relapse. Relapses will occur in spite of every care and the patient is often worse off than before. Dr. Bull has recently shown that recurrence is so common that the term "radical cure" should be abandoned. Saigon claims that the operation may kill the patient, and that none is justifiable unless the danger is proportionate to the operation and all other measures of relief have failed. The operation is beyond doubt a justifiable one and is now done all over the world. It has its limits. In proper cases it is excellent, while in others it is only a mutilation. Where must the line be drawn?

The next paper gave "A Few Points in the Management of Strangulated Hernia," by Dr. W. B. De Garmo, of New York.

Notwithstanding the mass of literature on the subject, strangulated hernia still remains the dread of every physician and the death rate continues unnecessarily high. Promptitude in reductions is essential. The diagnosis is generally easy, though pain at the point of constriction may be absent. All of the symptoms are masked by morphia and many patients are killed by it. Pathological changes are going on. Shock is always present. The only proper treatment is surgical. Muscular spasm as a factor no longer holds a place. Medical treatment is to be condemned. The local application of ether is of some value by helping to reduce the congestion of the parts. Taxis is dangerous in unfamiliar hands. Too much pressure is apt to be used. Anæsthetics are of some value and should be used, but only when we are prepared to operate. Muscular spasm, as already stated, does not exist. Aspiration is sometimes used, but it only increases the patient's danger. Many refuse to operate until fecal vomiting has set in, but many lives have been sacrificed by delay. The question of opening the sac is no longer debatable. The safety of your patient demands it. Adhesions should be carefully broken up, but if firmly adherent to the bowel, it is safer to cut off the portion so attached and return it with the bowel. In removing a portion of mesentery, spread it out over the abdomen and tie each artery separately. It can then be reduced more naturally. (Treeves says that these cases are more liable to intestinal obstruction). After reducing the bowel introduce your finger and examine the ring. No antiseptic solution should be used. Small perforations can be tied. When sloughing has occurred an artificial anus should be made. When in doubt do not reduce the bowel.

Dr. Joseph Ransohoff, Cincinnati, read an elaborate paper on "The Management of Gangrenous Hernia, with Report of a Case."

With the advances in surgery, the occurrence of gangrenous hernia is becoming less frequent. Of 486 cases of hernia, 68, or 14 per cent., were found to be gangrenous. Authorities claim that the constricting ring should not be divided, but the peritonitis begins within. Resection of the bowel has never become popular, although the results of the formation of an artificial anus are deplorable. Still, every case should be considered on its own merits. When the patient is able to bear it, primary resection is unquestionably the best procedure. By resorting to it at once, complete recovery may take place in six weeks. When an artificial anus is formed, the patient has still to undergo another operation, which in itself is extremely dangerous.

The papers were now open for discussion and Dr. Marcy took up the treatment of hernia. He

claimed that the "radical cure" was not a misnomer. He had operated two hundred times, with perfect success in 90 per cent. He employed buried sutures, used four layers of ligatures, cut off the sac as high up as possible, approximated the pillars of the ring and sealed the external wound with iodoform collodion. He attributed his success to, first, perfect asepsis, second, the use of sutures that can be buried and, third, dressing the wound so that no drainage is required.

Dr. W. Watson, Jersey City, followed with some remarks on Abdominal Surgery.

Abdominal surgery differs from all other surgery. Conservative surgery is that which gives the best relief, which enables the surgeon to save most lives and leaves the patient in the best condition. It does not consist in delay or hesitation. It should be always aseptic. There are two methods you can depend upon for securing asepsis, the mechanical or the chemical. Formerly drainage tubes were used, but are no longer necessary where you have preserved an aseptic condition. When suppuration has taken place or when septic material has been left behind, always use a drainage tube. If we knew the exact condition within the abdomen, we would know what to do. Only those who are thoroughly qualified should operate.

The work of the section on Thursday morning was opened with a paper by Dr. Mynter, of Buffalo, entitled, "Is Amputation Indicated in Hip-joint Diseases?"

From the history of two cases he believed that secondary amputation is not necessary. When, after resection, the disease continues and the caries extends, the discharge is due to improper antiseptic precautions and to a portion of diseased bone being left behind. In some of the earlier amputations, osteomyelitis, involving the whole femur was found. To resect and leave the bone in such a condition is useless. Amputation is the only resource. By a simple operation we can avoid this. In the first case the joint had been resected some time before, but the disease progressed. The wound was thoroughly curetted; a counter opening was made just above the lower epiphysis, and gauze drainage was introduced the whole length of the bone. The gauze was changed every six days and immediate improvement followed. The patient recovered with a strong, movable joint. In the second case, the disease was removed by the curette, a counter opening made in the bone, and gauze introduced. The patient recovered with a good joint and free motion. Since operating, he found that the same treatment was advocated by Poore.

Many of the cases of so-called hip-joint disease are really cases of osteitis and their treatment by

extension is unnecessary. An early operation should be done to remove the focus of disease and thus prevent its extension to the joint.

Dr. Ridlon considered the results exceptionally good. A large majority of these cases begin in the bone and the only effect of extension is in preventing contraction and deformity. If we can localize the focus of the disease, an operation may be indicated.

Dr. Randall, of Chicago, said that there may only be one focus of disease, but there are often several. In many cases the disease commences outside the bone, while in others it commences in the head of the bone. When suppuration has set in, excision is best. Under puberty, these operations are not dangerous.

In closing, Dr. Mynter attributed the good results to early operation, thorough asepsis, removal of all diseased bone, and union of the wound by granulations.

The next paper was on "The Cremasteric Reflex in Varicocele," by Dr. T. A. McGraw, of Detroit. The various theories in regard to the causation of varicocele have never been satisfactory. Injuries and venereal excesses, general diseases, sprains, etc., may have some effect in certain cases, while in others they have no effect. The essential factor has escaped recognition. The absence of valves in these veins is not a fact. Pathological influences affecting the blood, and through the nervous system, the muscular fibres in the veins, have been too much overlooked. Any inherent defect would impair their tonicity. Many cases are due to this. Local injuries and sprains may act in this way. Such cases are curable; when the trouble is in the venous walls, cure is difficult.

The muscular action of the venous walls is important. The spermatic veins are specially dependent upon the cremaster, the abdominal muscles and the tunica dartos of the scrotum. The cremaster is the most important. It cannot contract without compressing these veins. This is the true and only function of the cremaster, and when absent, varicocele occurs. The contraction of the abdominal muscles is given as a cause, but it is doubtful, for the circulation can be carried on without them. The action of the tunica dartos is unimportant. When the cremaster is defective, the reflex may be wanting. In venereal excesses there may be paresis of this muscle, and reflex irritations may produce the same result. In hernia the veins may be enlarged, but not varicose. While hernia and varicocele may co-exist, they are virtually antagonistic. This is explained by the development of the cremaster muscle. While varicocele is more common on the left side, this may be due to the weaker muscular development on that side rather than to any peculiar anatomical arrange-

ment. Varicocele is most frequent in youth. In adult life, varicosities may exist all over the body, without the development of varicocele.

Dr. R. Harvey Reed, of Mansfield, O., read a paper on "Experimental Researches in the Implantation of the Ureters into the Rectum." The object of these experiments was to discover a method of affording relief in certain diseased conditions of the bladder by implanting the ureters into the rectum, imitating the condition found in the fowl. His experiments, twelve in number, were performed on dogs and were sufficiently gratifying to warrant further trials. In the unilateral implantations, three in number, the results were excellent and all recovered. In the bilateral, nine in number, all died; but he believed that success could be secured by implanting one ureter at a time and waiting until the effects had entirely passed off before implanting the other. The presence of urine in the rectum does not appear to produce any injurious results, and in the unilateral cases, the kidneys showed no irritation.

The next paper on "Visceral Phlebotomy," was read by Dr. George Harley, of London, England.

When first introduced in 1886, this operation was abused and denounced as an unjustifiable procedure, but since then, it has been extended to the pulmonary tissues. In two cases of enormously enlarged liver, in which it had been used, its beneficial results were remarkable, in one case twenty ounces of blood being withdrawn. Pulmonary phlebotomy has been tried by Dr. Christian Simpson. It is the most difficult form of phlebotomy, as the closure of the wound must be effected by the resiliency of the chest walls. In one case he used a trocar, eight inches long, of the size of a No. 2 English catheter, and plunged it into the liver up to the hilt, drawing off twenty ounces of blood, with immediate amelioration of the dangerous symptoms and the prompt recovery of the patient. He recommends it in all cases of severe congestion of internal organs, but certain precautions must be observed. Induce anesthesia by cocaine. Select the seat of puncture so that a bandage can be applied to stop up the wound. Use a trocar of the size of a No. 2 catheter (English) and puncture deeply. Let the direction of the instrument be such as to avoid all large vessels. Let the instrument be rapidly thrust in. If no blood flows withdraw it slowly. When the blood has been obtained, in withdrawing it, place your finger over the end of the instrument to form a clot. Strap the wound with adhesive plaster and put on a long flannel bandage.

"Advances in Aseptic Surgery," by F. J. Thornbury, M.D., of Buffalo, N. Y., was a resume of the author's experiences in Bergmann's laboratory. He showed some new sterilizing apparatus and advocated

the dry dressing of wounds, as moisture is favorable for bacterial growth, while dryness destroys them. Hot soda water is best to sterilize instruments, and steam for bandages.

Dr. Chr. Fenger, of Chicago, read a paper on "Ligation of the Hypogastric Artery."

The subject does not present anything new nor any advance in treatment, but on account of the rarity of the operation, he wished to record two recent cases in his experience. The first case was one of peri-rectal pelegmonous ulceration, due to tuberculous inflammation. At the end of the third week the abscess presented at the right side of the anus and was opened. Fever and suppuration continuing, examination was made and a peri-rectal abscess was discovered. This was freely opened, a counter opening being made behind to allow of thorough drainage. The following week, hemorrhage appeared and the cavity was stuffed with iodoform gauze. Eleven days after, hemorrhage again appeared as it did on the third and fifth day after. The patient was now exsanguinated and the hypogastric artery was tied, after which there was no more hemorrhage. The bleeding came from a branch of the internal iliac artery. It was either abscess hemorrhage or the artery might have been injured while making the counter opening.

The second case was that of a man who received a blow in the gluteal region, which was followed by the appearance of a large tumor. One year after the tumor commenced to enlarge and became painful. Believing it was a blood cyst, it was opened and drained. In five weeks the wound had healed and the patient left the hospital. In ten days it opened again, giving exit to a bloody discharge, and in a few days closed again. It continued doing so for some time. Finally after some exertion, severe hemorrhage came on which was temporarily checked by plugging. On readmission there was a tumor, 6x5, at the seat of the injury. Remembering Bell's case, the internal iliac was first ligated, and after great difficulty the hypogastric artery was secured. The man died soon after from acute sepsis.

"Operative Procedures at the Base of the Brain," was the subject chosen by Dr. Ernest Laplace, of Philadelphia, his remarks being based on a case which he reported. A boy, ten years of age, while at play, fell on a broken fencing foil. The steel penetrated the left orbit, between the inferior orbital ridge and the eyeball. The child became comatose, with right hemiplegia, left facial paralysis, complete aphonia, respiration 30, pulse 140, temperature 104.5°. The wound was explored without result, and, thirteen days after, trephining was performed low in the tem-

poral fossa. A miniature egg-beater, made of four loops of platinum wire, was gently insinuated between the dura mater and the skull, as far as the cavernous groove. It was then turned on its axis and about a teaspoonful of clotted blood was removed piecemeal. Venous hemorrhage set in, but this was checked by plugging with iodoform gauze. The boy made a good recovery and six months after he had control of his extremities. He emphasizes the safety of trephining near the base of the skull, the ease of arresting violent hemorrhage from the sinuses of the dura mater by plugging with gauze, and the importance of drainage in all cases of cerebral injuries.

"Gunshot Wounds of the Cerebrum," by C. E. Ruth, of Muscatine, Ia., presented the subject of cerebral surgery from another point of view. He advocated the following up of all bullets and their removal, if possible. To locate the direction of the bullet, he prefers a porcelain-tipped probe with a platinum handle. Experience is requisite to prevent injury.

"Cosmetic Surgery of the Nose" was the subject of a short paper by Dr. J. B. Roberts, of Philadelphia, Pa. Operative surgery can do much to relieve facial defects. Nearly all of them can be improved. Hemorrhage and violent inflammation are unknown. Most of the operations can be done through the nostril or mouth. Cuts on the face made in oblique lines are invisible. Plastic surgery should be cultivated by every surgeon.

At the session of the section held Thursday evening several papers were read. The first was by Dr. Geo. E. Fell, of Buffalo, on "Forced Respiration," during which he demonstrated his apparatus which consists of a piece of rubber tubing near one end of which is a valve, the other being attached to a double bellows. When tracheotomy has been performed, the tube is attached directly to the tracheal tube, but in other cases a mask is used which covers the mouth and nostril. By this apparatus nineteen lives had been already saved and the method was claimed to be superior to all other methods of restoring suspended animation.

Dr. Edmond Andrew, of Chicago, then read a paper on "The Powerful Effect of Sulfonal in Arresting the Cramps of Fractured Limbs and other Reflex Spasms." In a case of fractured limb in which the patient suffered greatly whenever he fell asleep, from painful muscular contractions, and in which he had tried numerous remedies, he found that 15 grain doses of sulfonal, repeated two or three times a day, completely controlled the spasms. He had since tried it in other similar cases with equally favorable results. He believed it would prove equally valuable

in all spasmodic affections. Several other members present corroborated the views advanced though they had not used it to such an extent.

"Amputations in the light of Mechanical Science the next paper by Dr. S. L. McCurdy, Dennison, O. versus Prothetical Science" formed the subject of While all authorities now advise against amputation through the joints, when possible, the speaker advocated their performance there as furnishing better stumps than elsewhere. The broad articular ends of the bones afford better points of attachment for artificial limbs and render their adjustment firmer than at any other portion of the bone. The fact that instrument makers objected to making limbs for adjustment at the joints was no reason why it should not be done.

Dr. King, of Missouri, regretted to differ with the speaker, but in his experience, the stumps following amputations through the joints were the ones which gave him most trouble and he never amputated through a joint if he could possibly avoid it. He always went two or three inches above the joint. In using artificial limbs the pressure was not made upon the end of the stump. Other speakers concurred with Dr. King, but the point was made that the amputation should be made as near the upper joint as possible, just leaving sufficient stump to allow of the firm adjustment of the artificial leg.

The Friday morning session was opened by a paper by Dr. Edward Martin, Philadelphia, on "Air in the Veins," based upon experimental work. The danger of its occurrence is greatly overestimated. When exposing the parts at the root of the neck, there is either bleeding from the vessels or the vein collapsed. It is impossible, ordinarily, to have air sucked in, but if the vein remains patulous and forced inspiration occurs, you will then have air aspirated into the circulation, but it will require a considerable quantity to cause dangerous symptoms. It is only liable to occur when the walls of the vein are thickened by disease or its severed ends are kept open by pressure. When it does occur in the human subject, it is most dangerous. The only reliable signs of its occurrence are the peculiar frothing churning sound in the heart, with signs of cardiac failure. The suction sound, generally spoken of, is of no value. When the accident occurs, aspiration of the great veins or right auricle may prove of value while the heart is freely stimulated. If kept going for half an hour to one hour, recovery may take place.

Dr. R. Merrill Ricketts, of Cincinnati, then read a paper on "Removal of the Astragalus for Talipes Equino-Varus; Neurectomy of Great Sciatic Nerve; Amputation of Scrotum and Prepuce for Abnormal Condition of the Skin." In the first case, the foot

was turned to the right and pulled backwards so that the boy walked on the back of his toes. The astragalus was removed, the plantar fascia divided with the tendo Achilles, the foot pulled into position and plaster applied. He was able to move around on crutches in four weeks, and in ten weeks he left the hospital with a useful foot.

In the case of hypertrophied scrotum, etc., there was no history of syphilis or tuberculosis. He was a great cigarette smoker. The scrotum was six times its normal size, but there was no retraction nor tenderness. If punctured, a clear lymph would flow out. He had chills four times a year. The redundant scrotal tissue was removed and circumcision performed, and the patient made a good recovery. The exact pathological condition present in this case was unknown. The patient had been seen by a number of prominent surgeons, but no diagnosis was made.

The third case was one of neurectomy of the great sciatic nerve. The injury was due to a gunshot wound of the leg. The bullet passed through the left leg above the knee. Pain was most marked in the foot and was so severe that he had become a confirmed opium user, taking 15 grains of morphia a day. On cutting down on the nerve, it was found much enlarged. One and three-quarter inches were excised and the divided ends were stitched together. After the operation pain was still complained of, but it gradually disappeared and the patient is now well.

Dr. Ridlon, of Chicago, said that in some cases of clubfoot, only by excision of the astragalus can a cure be effected. In one case, every method recommended had been tried, but the deformity always returned. Finally the astragalus was removed and it was then seen why the other measures had failed. The surface of the bone was bevelled and facing backward.

Dr. R. Sayre, of New York, had not yet met a case where removal of the astragalus was necessary. In one case, forty years of age, section of the ligaments was sufficient. All these cases can be cured by proper manipulations and section of the ligaments. The reason why relapses occur is because sufficient force is not used to break up all adhesions. No case can be considered cured unless the patient can hold his foot in a correct position without support.

The only paper read at the afternoon session was by Dr. W. H. Myers, of Fort Wayne, Ind., on the "Treatment of Compound Fractures." The indications in these cases are to arrest hemorrhage, adjust the fractured ends of the bone, get immobilization of the parts and prevent putrefaction. These cases were formerly treated by amputation and, when an attempt was made to save the limb, death frequently resulted. Since the introduction of antiseptics all

this has been changed and even in the severest forms of injuries to the extremities, where the blood and nerve supply is not entirely cut off, a successful attempt may be made to save the limb. The great essentials are absolute cleanliness, perfect immobility and infrequent dressings. Drainage is not necessary. The only difference between simple and compound fractures is the development of putrefaction, and with ordinary care this can be prevented. Too many limbs are sacrificed by amputating.

This paper was followed by an animated discussion in which several joined, all agreeing with the author of the paper that many limbs, which are now amputated could be saved. Even where pieces of bone are broken off, it has been proven by experiments in bone grafting, that under favoring conditions, they can be made to unite although the periosteum has been destroyed. Dr. Ricketts, of Cincinnati, advised that where there was any doubt as to the condition of the parts, we should make an exploratory incision and examine the bones and, if necessary, wire the fragments together.

At the close of the discussion, the section adjourned. A number of papers on the programme were not read, others only partially read, and some read by title only. On account of want of time, discussion was necessarily limited and, in many cases, notably on the papers on "Hernia," no discussion was held at all. On this account, many questionable statements go forth unchallenged and, to those not present, apparently acquiesced in by the members of the Association. Fewer papers and fewer discussions would be better for all.

The "Address on Surgery" which was delivered by Dr. John B. Hamilton, of Chicago, had for its subject the "General Principles of the Surgery of the Human Brain and its Envelopes." The author gave an excellent resumé of the work done in this department of surgery during the past year, quoting extensively from the ancient writers to show the methods of treating cranial injuries which were in vogue among them. In speaking of the diagnosis of diseases and injuries of the brain, the term, "cerebral localization" was condemned as being both obscure and unnecessary. The diagnosis of injuries, abscesses and tumors of the brain is more or less difficult according to the site of the lesion. Subdural abscesses and pistol shot wounds often give negative symptoms. The diagnosis of lesions of the motor area, of the speech centers, and of the sensory cortical centers is now well defined, but the diagnosis of lesions of the central ganglia is yet in an uncertain state. The use of the ophthalmoscope in cerebral surgery has come to be essential.

A. D.

Surgical Memoranda.

Transillumination of the Mastoid Process.—At the meeting of the Vienna Medical Society, May 20, 1892, Prof. Urbantschitsch demonstrated a new method of rendering the mastoid process translucent. An electric lamp is held against the process, near the place where the concha of the ear is attached, and a speculum is then introduced into the mentus. If the mastoid process is in a healthy condition, the walls of the auditory canal are illuminated by the transmitted light. On the other hand, in cases of purulent inflammation of the middle ear in which the mastoid process is affected, the translucency of the latter is greatly reduced. This method in the author's hands has proved a valuable auxiliary in the diagnosis.—*Wiener Med. Presse*, No. 21, 1892.

Treatment of Erysipelas.—Dr. Paul Niehans has employed the following treatment with much success. He paints around the affected extremities, a streak of collodium, about the breadth of two hands, so that after it has dried the limb appears as if constricted by a bandage. The erysipelas never spread beyond this fence. This procedure may be utilized in cases of erysipelas of the thigh, even if the inflammation has extended to the inguinal region. In erysipelas of the face excellent results were obtained, improvement occurring within two or three days.—*Centralbl. f. Chirurgie*, No. 15, 1892.

Ileo-Sigmoidostomy.—Mr. H. Littlewood reports a successful case of ileo-sigmoidostomy (Senn's method) for intestinal obstruction due to malignant disease of the hepatic flexure of the colon. It was found inadvisable to excise the growth and therefore the lower part of the ilium was stitched to the upper part of the sigmoid flexure. A loop of ileum was pulled out of the abdominal wound, emptied of its contents, and then surrounded with a piece of India rubber tubing. The same was done to a loop of sigmoid flexure. An incision about one inch long was made in the convex surface of each. Senn's decalcified bone plates were inserted and secured in the usual way, four extra silk sutures being put in round the margin of the plate, on the convex surface of the two pieces of bowel, to give a little extra security. The author has modified Senn's plates by fixing a tube of decalcified bone into the aperture of one of the plates. This should be made to accurately fit the aperture of the other. By this method the two plates can be held together and the two parts of the intestinal walls between them brought evenly into contact with each other.—*Lancet*, April 16, 1892.

Rapid Dilatation of the Uterus for the Treatment of Hemorrhage.—In a paper read before the Medical Society of London, March 28, 1892, Dr. A. Routh presented the following conclusions:

1. Menorrhagia, and especially metrorrhagia, constitute an indication for dilatation.
2. This is best done by graduated bougies under an anesthetic.
3. Pyrexia is not to be feared if the procedure is carried out under antiseptic precautions, unless malignant disease or tubal disease is present.
4. That even with tubal disease dilatation is not necessarily contra-indicated.
5. That dilatation should precede all other operations for the relief of hemorrhage.
6. That dilatation often suffices to effect a cure.—*Medical Press and Circular*, March 30, 1892.

Surgical Treatment of Pyloric Stenosis.—Dr. N. Senn reports fifteen operations performed for this condition, and concludes as follows:

1. Pyloroplasty, as devised by Heineke-Mikulicz, is the safest and most efficient operation for cicatricial stenosis of the pylorus.
2. Pylorectomy in the treatment of carcinoma of the pylorus is a justifiable procedure when the disease is limited to the organ primarily affected, and the patient's general condition furnishes no contraindication.
3. Gastro-enterostomy by the aid of large, moist perforated plates of decalcified bone, should be resorted to in the treatment of malignant stenosis of the pylorus, as soon as a positive diagnosis can be made and a radical operation is contra-indicated by local or general conditions of the patient.—*Medical Press and Circular*, Feb. 24, 1892.

Treatment of Leg Ulcers with Unna's Zinc Dressing.—Prof. L. Heidenhain describes the treatment adopted at the University Clinic, at Greifswald. The patient first takes a warm foot-bath for a period of fifteen to thirty minutes, cleansing the limb thoroughly with soft soap. After drying, the entire leg is disinfected with 1-1000 sublimate solution, the ulcer being carefully wiped with cotton. The surroundings of the ulcer for a considerable distance, as well as all eczematous skin, are covered with a thick layer of Lassar's zinc paste (zinc oxide, starch aa 1.0, vaseline 2). The ulcer is dusted with iodoform, and later when it has become clean, red precipitate ointment is applied. Dermatol applied in small quantities to clean ulcers has a remarkable effect in diminishing the secretion; but if there is marked discharge, the ulcer is covered with a layer of sterilized gauze. An application of Unna's zinc paste is then made (zinc

oxide, gelatine, aa 20, glycerine and water, aa 80). This preparation is first rendered fluid by placing the vessel containing it in hot water and it is applied with a brush to the leg, from the toes to the tuberosity of the tibia in front and as far as the heads of the gastrocnemius behind. An ordinary starched gauze bandage soaked in water is applied over this from the toes to the knee. Another layer of the paste is applied so that the meshes of the gauze are filled up with it. Then follow alternate layers of bandage and paste, until about four applications of each have been made. Finally, a muslin bandage is applied, so as to protect the clothing from the paste. About one-quarter hour after the application of the dressing, the patient is allowed to go home, and after twenty-four hours it is usually dry and firm. As long as the discharge remains profuse, the dressing must be changed twice a week, but soon once during this time, and later every two weeks, each application being preceded by the foot-bath. As a general rule the dressing should be renewed as soon as the outer surface shows spots of moisture. Heidenhain strongly recommends this treatment to the general practitioner on the grounds that it is cheap, efficient, and enables the patient to go about.—*Berliner Klin. Wochenschr.*, April 4, 1892.

Lateral Anastomosis of the Ileum for Malignant Stricture.—Dr. W. E. Ashton reports a successful case of this operation and calls attention to the following practical points:

1. The necessity of frequently douching the seat of operation with warm sterilized water to prevent the dangers of infection and shock.
2. That rapidity in operating is of great importance for success.
3. That early feeding by the mouth should be employed in all cases, especially in those which are weak and exhausted.
4. That early feeding by the stomach does not add to the dangers of leaking, as the parts are perfectly secure if proper rings and additional sutures are employed.
5. That an important factor in causing subsequent closure of the anastomotic opening is a direct union between the edges of the incision.
6. That the danger of subsequent closure of the artificial communication, is materially lessened by using a steel punch in making the opening, by stitching the edges of the serous and mucous coats of the bowel together, by placing the lateral sutures of the ring as close as possible to the margins of the incision, and lastly by making the anastomotic opening sufficiently long and of an oval shape.—*Cincinnati Lancet Clinic*.

Treatment of the Pedicle in Ovariotomy.—Mr. Skene Keith, has used the cautery 132 times for the treatment of the pedicle of ovarian tumors, in 14 cases both pedicles were secured from hemorrhage in this way. He recommends the ligature only for slender pedicles and for cases requiring enucleation. He considers silk the best material for ligatures. The ligature of silk ought to be just so thick as to withstand the strain the operator can put upon it, there is not any advantage in having it thicker. The silk must be chemically and not apparently clean. As simple and effective a way of securing this as any, is to boil it, and then keep it in a 1-20 solution of carbolic acid. In applying the ligature, the pedicle must always be transfixated unless it is exceptionally thin. The best plan is tie each half without interlocking the loops, so as not to run any risk of drawing on the knot of the first loop when the second is tied. The two double ends are tied together, and when this is done it is remarkable into what a small compass the pedicle is drawn.—*Lancet*, April 30, 1892.

Lithotripsy in Children.—Mr. F. A. Southam reports six cases in which this operation was performed with success. Before deciding upon lithotripsy he thinks it advisable to determine the exact size of the stone. This can best be estimated by measuring it with a small lithotrite, when the child is sounded; more satisfactorily, of course, if the examination is made under anaesthesia. As cystitis is usually present to a greater or less extent, the bladder should be thoroughly washed out with boric acid solution while the patient is under the anaesthetic. For a few days previous to the operation, the irrigation should be repeated every morning, an anaesthetic not being necessary. If a soft India rubber catheter is used for this purpose, it causes scarcely any pain, and is usually well tolerated by the patient. In none of the author's cases was it found necessary to continue the irrigation after the operation, the removal of the calculus having been followed by a subsidence of the symptoms of cystitis. As the operation is often somewhat prolonged, it is very important to guard against exposure to cold, and also to diminish, as far as possible, the effects of shock. The body and limbs of the child should be wrapped in flannel bandages, and during the operation the patient lies upon a large, flat hot-water tin, covered over with a blanket, which fits on the operating table. If hot fomentations are applied to the lower part of the abdomen and perineum after the operation, the child will pass urine in the course of a few hours without any straining or difficulty. In only one of the author's cases was there any rise of temperature, and the following morning the patients were practi-

cally convalescent. He believes that in the future lithotripsy will quite supersede lateral lithotomy in children, and also that if a stone is too large to be crushed the supra-pubic operation should be selected.—*Lancet*, April 23, 1892.

The Surgery of the Tongue.—In an excellent paper on this subject read before the American Surgical Association, May 31, 1892, Dr. Dandridge presented the following conclusions:

1. Sufficient experience has been accumulated to show that the removal of cancer of the tongue prolongs life and adds to the comfort of the patient, and further affords a reasonable hope of permanent cure.
2. All operations should be preceded by an effort to secure thorough disinfection of the mouth and teeth.
3. In the treatment of continued ulcers and sores on the tongue, caustics are to be avoided and all sources of irritation removed.
4. Persistent sores on the tongue should be freely removed by knife or scissors if they resist treatment.
5. When the disease is confined to the tongue, Whitehead's operation should be employed for its removal.
6. In this operation, the advantage of preliminary ligation of the lingual artery is not definitely settled, but the weight of authority is against its necessity.
7. The advantage of leaving one-half the tongue in unilateral disease must be considered undetermined, but the weight of positive experience is in its favor. In splitting the tongue into lateral halves, Baker's method of tearing through the raphe should always be employed.
8. A preliminary tracheotomy adds an unnecessary element of danger in the removal of the tongue in ordinary cases.
9. When the floor of the mouth has become involved or the glands are enlarged, Kocher's operation should be employed, omitting the spray and preliminary tracheotomy.
10. Removal of the glands by a separate incision after the removal of the tongue, must be considered insufficient.
11. Volkmann's method still rests on individual experience. Its just value cannot be determined until it has been subjected to trial by a number of surgeons.
12. Thorough and complete removal should be the aim of all operations, whether for limited or extensive disease.
13. By whatever method the tongue is removed, the patient should be up and out of bed at the earliest possible moment, and should be generously fed.—*Journ. of the Americ. Med. Association*.

Resection of the Knee.—In a discussion which occurred at the late French Surgical Congress, it was stated that white swellings of the knee may occur with or without bone suppuration. These forms of tuberculosis are so variable in their evolution, that Dr. Ollier, of Lyons, does not always consider it necessary to amputate in purulent cases; resection gives very good results. Dr. Ollier favors bone suture, especially in cases of suppuration and fistula. He performs tubular suture by means of a lead pipe which can be removed when the sutures are taken out. Though bony union is apt to occur, he preserves with care the periosteum which facilitates it. Resection should be avoided in children, yet a typical resection is preferable to curettings, etc.

—*Progrés Medical.*

Cæsarean Section.—Prof. T. Gaillard Thomas, reports a successful case of this operation, the patient being a dwarf, twenty years of age, and makes the following suggestions as to details:

1. I regard the lifting of the uterus out of the abdomen, and the partial closure of the abdominal walls before cutting into it, as a very important step, and one which conduces greatly to the prevention of the entrance of septic fluids into the peritoneal cavity. In no future case would I neglect it.

2. While undue haste should be avoided, rapidity of operation should be striven after. The demands even of a rapid operation upon the nervous system of the woman are necessarily great, and the tardy manipulations of an operator who wastes precious time in discussions, in asking opinions, and in illustrating views, are greatly to be deprecated. The time is not propitious for a clinical lecture.

3. In lengthy operations I much prefer ether to chloroform; in this one, I prefer chloroform to ether from the fact that vomiting subsequent to operation is a source of danger to the uterine sutures, and may force out fluids from the uterine cavity into the peritoneum, even if it do not disturb the sutures.

4. It is a matter of the first importance that the operation should be performed, not before nor after, but during the first stage of labor. Before full establishment of this, and after escape of the liquor amnii, the chances of success are greatly diminished.

Dr. Thomas frankly admits that the operation of laparo-elytrotomy, of which he was the originator, has failed to become a recognized and well-established surgical procedure, not on account of its own shortcomings, but because the modern improvements in the Cæsarean section have put that operation far above laparo-elytrotomy in ease, precision and certainty of result.—*Medic. Record*, May 14, 1892.

A New Method of Intestinal Surgery.—Dr. H. W. Maunsell, devised the following method about ten years ago:

With thorough antiseptic precautions make an incision in the median line of the abdomen, large enough to permit of thorough search for the wounded or diseased portion of the bowel. Having found the part to be excised, bring it outside of the abdomen, with from four to six inches of healthy gut on either side; empty it of its contents, clamp the healthy gut at two points from four to six inches above the diseased or wounded part; pack well around with large, warm antiseptic sponges.

Lateral laparotomy should be performed in all operations on the appendix vermiciformis, cæcum, or on any part of the colon. The bowel is clamped as follows: Place a large flat sponge across the intestine from four to six inches from the part to be excised; transfix the sponge and mesentery near the gut with a strong safety pin. Pass the pin again through the sponge on the other side of the gut, and clamp the pin, or better still have two clamps prepared for immediate use, with the sponges sewn firmly to the arched portion of the safety pins. The sponge should be sufficiently large to compress the intestine against the pin. A wound in the longitudinal axis of the bowel may be easily sewn up with a continuous suture of chromicized catgut, fine silk, or carefully selected horse-hair passed through the peritoneal and muscular coats. In performing circular enterorrhaphy apply ligature or torsion to the arteries separately. Having cut off the cancerous, gangrenous or injured portion of the intestine, bring together both ends of the bowel with two temporary sutures passed through all the coats of the intestine. One of these sutures is placed at the mesenteric attachment of the gut, and the other at the most distant portion of the bowel from the mesentery. When enterectomy is performed for gangrene or injury, the lower or distant segment of the bowel is generally the largest; but where the operation is performed for stricture, cancer or tumor, pressing on or constricting the lumen of the gut, the upper or proximal portion is often much larger than the lower. An opening is made in the larger segment of the gut, through which the invaginated ends of the divided bowel may be dragged by the long ends of the temporary sutures, and when they are accurately sewn together all around, they may be pulled back into their normal position. The edges of the longitudinal slit made in the bowel, which begins about an inch from its transverse section, should be well turned in and brought together with a continuous suture passed through the peritoneal and muscular coats only.—*American Journal of the Medic. Sciences*, March, 1892.

Surgical Treatment of Sciatica in Varicose Cases.—Dr. Quenu, of Paris, thinks that the best treatment of such cases consists in the wearing of elastic stockings. In many operations he has found varicosities, phlebitis and periphlebitis, with adhesion of the varicose vessels to the nerve. The cutting out of these varicose bundles has effected the cure of the patient.—*Progrés Medical*.

Secondary Suture of the Radial Nerve.—At the sixth French Surgical Congress, Dr. Ehrmann reported the following operation on a man who had been stabbed, and suffered from complete paralysis of the arm. The hemorrhage had been profuse, and the wound healed in three weeks. Six weeks later, Dr. Ehrmann decided to operate. He found a cicatricial nodule on the radial nerve, the other nerves being intact. The radial nerve was carefully dissected out, but the distance between the two ends was too large to allow of juxtaposition. They were united at a distance by means of catgut threads. During the tenth week sensibility began to reappear. During the ninth month muscular contractions became more active. To-day, or the eleventh month, movements of extension of the wrist and fingers are performed with ease though there still remains a certain degree of muscular atrophy.—*Progrés Medical*.

Cocaine Anæsthesia in the Radical Cure for Hydrocele.—Nicase (*Revue de Chirurgie*, No. 3, 1892) in a discussion before the Société de Chirurgie upon a case of death due to the injection of cocaine into the tunica vaginalis, stated that such cases should not lead surgeons to abandon a method which, if properly employed, is without danger, and which entirely prevents the pain incident to the injection of iodine into the serous investment of the testicle.

He describes his method of treating hydrocele.

He first punctures the tunica vaginalis, and allows about one-fourth of the liquid to escape. He then injects into the liquid which remains within the vaginal tunic, forty minimis of a four per cent. solution of cocaine. The scrotum is then lightly manipulated for four or five minutes, when the rest of the liquid contained in the tunica vaginalis is evacuated and an iodine injection is made.

The solution injected contains about one and a half grains of cocaine. This will secure absolute anæsthesia, even when it is diluted by a quantity of hydrocele fluid sufficiently great to make the percentage of cocaine about 1 in 4000.

This method of procedure possesses the advantage of permitting the absorption of but a very small portion of the drug.—*Therapeutic Gazette*.

Treatment of Pelvic Suppuration by Vaginal Debridement and Antiseptic Drainage.—Dr. Felix Formento, of New Orleans, recommends the method of La Royenne in cases of pelvic suppuration, phlegmons, pelvic peritonitis, pyosalpinx, etc., which gives a mortality of only one or two per cent. The operative procedures consist, (1) in puncturing the well limited collection by means of a special trocar in the posterior vaginal *cul de sac*, except in rare cases of abscesses pointing between the vagina and bladder; (2) in incising largely and transversely with a metrotome and keeping the cavity dilated until cicatrization. The means of controlling the hemorrhage, which is of rare occurrence, consists of a properly shaped, fine, elastic iodoformed sponge introduced into and compressing the incision in the *cul de sac*. In order to facilitate the operation, Prof. La Royenne invented a special trocar grooved sound. The transverse debridement should be limited to eight or nine centimetres. The finger will be the best instrument to reach multiple cavities. The puncture of the rectum should be avoided by placing a finger in that organ and another in the vagina. The following rules should be followed:

1. After complete anæsthesia and thorough disinfection, the patient lying on her back with her thighs strongly flexed, the purulent cavity should be once more well defined and the position of womb and rectum well made out.

2. An assistant presses down on the abdomen to cause bulging of the cavity on the vagina.

3. The operator plunges his trocar, properly directed, in the centre of the posterior *cul de sac*, immediately back of the os uteri.

4. The trocar, after penetrating the cavity, is withdrawn, and through the groove of the canula, held *in situ*, the metrotome is introduced into the abscess. The canula is withdrawn, the metrotome opened to the proper width and withdrawn, while opened, thus incising transversely the walls of the abscess and vagina.

A weak antiseptic solution is injected. A proper sponge, well iodoformed and tied with a thread, is introduced into the abscess and left protruding through the vaginal incision. This method, thus followed, is very simple and offers but little danger.—*New Orleans Med. Journ.*

Prof. Wm. H. Keen, recently performed an amputation at the hip-joint for a rapidly growing sarcoma of the thigh. What makes the case probably unique in surgical annals, is the fact that she was in the fifth month of pregnancy at the time of the operation. The arteries were controlled by Wyeth's method, and scarcely any loss of blood occurred.

Suppuration.—Dr. A. C. Abbott states (*Int. Med. Mag.*) that from the evidence he has been able to gather, it is plain that suppuration cannot be considered a specific process in the same way that tuberculosis, diphtheria and anthrax are specific processes, but that the causes underlying it are manifold: in most cases being the result of the presence in the tissues of the common pyogenic cocci; frequently following the invasion of the tissues by organisms not normally pyogenic in character; produced experimentally by a variety of irritating substances without the presence of bacteria, and by the poisonous products of the growth of bacteria, and, finally, following the introduction into the tissues of the proteid substances that make up the body of the bacteria themselves.—*Weekly Medical Review.*

Surgical Operations upon the Posterior Mediastinum.—Drs. Quenu and Hartmann (Bull. et mem. de la Soc. de Chir. de Paris) have experimented on the cadaver as to the best means of rendering the posterior mediastinum accessible to surgical procedures. On the ground of their investigations they recommend the following operation:

A vertical incision, 10 centimetres long, is made over the angle of the ribs, the centre of which corresponds to the level of the spine of the scapula, or slightly below. The soft parts between the vertebral border of the scapula and the spinous processes of the vertebrae are divided, the trapezius muscle being drawn upward and inward out of the way of the incision, or a few fibres are cut. The rhomboideus is divided, and the ribs laid bare outside of the mass of the sacro-lumbalis. A portion of bone, two centimetres long, is excised from the third, fourth and fifth ribs subperiosteally. The costal pleura is separated by blunt dissection and the hand can then be readily introduced into the posterior mediastinum. The oesophagus, hilus of the lung and aorta are thus exposed. Notwithstanding the right-sided position of the oesophagus, it should be laid bare by an incision on the left side on account of the anatomical relation of the left costal pleura. The authors think that the procedure described may be utilized for the opening of abscesses in the posterior mediastinum, the removal of enlarged glands pressing upon the oesophagus and bronchi, and extraction of foreign bodies in the oesophagus.

A New and Practical Use for Aluminum.—This metal with its unlimited uses, seems to be peculiarly adapted for surgical appliances, instruments and artificial limbs; its low specific gravity, together with

its great comparative strength, are qualities that are desirable to be combined in an artificial leg or arm, and a very large demand may be predicted for the new aluminum limbs just about to be put upon the market by the enterprising house of A. A. Marks, of New York.

There are amputations of the lower limbs that surgeons deem desirable to make, in order to remove a part or the whole of a diseased or injured foot, without sacrificing more of the member than the parts involved. We refer to amputations, technically termed tibio-tarsal, tarso-metatarsal and medio-tarsal. These amputations have always been in disfavor with artificial limb makers, who have almost to a unit decried their license, and in too many instances have persuaded the surgeons to sacrifice much of a healthy leg merely to obtain a stump that would better accommodate the artificial limbs that they were able to produce.

The new artificial leg, constructed of aluminum, combined with the rubber foot, is adaptable to the above enumerated amputations. The socket of aluminum encases the stump and on account of the strength of the metal, the socket does not increase the diameters of the ankle to an objectionable degree in order to obtain the requisite strength; the metal is cast into the proper shape to give ease and comfort to the wearer; the aluminum socket is terminated by a rubber foot, which not only closely resembles the natural foot, but provides a soft, springy medium to walk upon, and a resistant, phalangeal ball to rise upon while walking, running or ascending stairs.

It is obvious that by this invention the amputation can be conditional upon the injury, and the artificial limb conditional upon the amputation. In this alone the invention of the aluminum and rubber leg will prove not only a boon to the man who has suffered the amputation, but the solution of a problem that has many times perplexed the operating surgeon, as it eliminates all the objections heretofore urged against amputations in the region of the tarsus. The surgeon may thus rejoice in being able to observe the old and consistent law of amputating with the least sacrifice.

Aluminum also plays an important part in the construction of strong and durable artificial arms. The socket of an arm being made of that metal, is light and strong and will enable the wearer to subject the artificial arm to severe uses without danger of destruction. It will not crack from overstrain like wood; it will not become soft and limpsey or foul from perspiration like leather; it is lighter than any other metal and is amply strong for every purpose.

Antiseptic Memoranda.

Disinfection of the Mouth.—Dellevie calls attention to several conditions, in which the mouth should be made as aseptic as possible. Several infectious micro-organisms are capable of living for indefinite periods in the mouth, in condition to carry infection if the opportunity presents itself. He has found that the following antiseptics may be used as mouth washes without injuring the teeth : corrosive sublimate 1 : 1500, B. naphthol 1 : 1000, thymol 1 : 1000, salicylic acid 1 : 350, saccharin 1 : 250, benzoic acid 1 : 100.—*Boston Med. & Surg. Journ.*

Chlorine in combination with Phenic Acid, the Ideal Antiseptic and Disinfectant.—J. E. Chambers, M.D., Coroner's physician of St. Louis, speaks as follows on this subject:

The term "Antiseptic" is no longer doubted as a medical term; nor is there longer a doubt of the value of antiseptics in surgery, midwifery, or the hygiene of the sick room.

The victory of antiseptics is the greatest triumph achieved by scientific medicine in an age of triumphs, and so numerous are the antiseptic preparations that have sprung up, that the question of what antisepsis is, changes to the question of the selection of an antiseptic agent.

The nearer we keep to nature the fewer mistakes we make. In calling nature to our aid we find that chlorine, in the shape of the various chlorides, is natures great antiseptic. Were it not for the chloride of sodium—common salt—in any ocean, it would be one seething mass of corruption, and the present invigorating sea-breeze would create a pestilence capable of removing all the higher orders of life from the face of the earth.

Ages before the terms "Septic" or "Antiseptic" were known or used, our ancestors were practicing antisepsis with chloride of sodium without knowing the philosophy of its action, and were nearer to nature than many scientists of our scientific era. The antiseptic property of chloride of sodium is inherent in the chlorine, sodium; like lime and mercury, having no antiseptic properties. The more ready a chloride is to decompose and give up its chlorine, the more marked are the antiseptic properties of that chloride. All the chlorides are now classified as antiseptics, while the bases of the various chlorides are usually inert, antagonistic to antiseptic action, or so irritating to the tissues as to unfit them for use in medical or surgical practice.

Chlorine has no rival as an antiseptic, but in its free gaseous form it is difficult to manage, while in

its compounds are found the objectionable features of the bases with which it is combined.

Following nature, custom and common sense, it has been a maxim from Biblical days that "Cleanliness is next to Godliness." Water being easily impregnated with chlorine, "Chlorinated Water" was highly recommended for cleansing foul ulcers before anything about antiseptics was known.

The cleansing property of water is well known, and the master of antiseptics for medical and surgical practice is a carbolized-chloro-oxide of hydroxyl, known as chloro-phenique. In this preparation are all the elements that go to make up an ideal antiseptic ; viz.: carbolic acid in sufficient quantity to anaesthetize the exposed nerve fibres and to reduce the local temperature, and chlorine gas held in suspension sufficient to destroy all septic material. A ten to twenty per cent. solution is a valuable wash to all ulcerated mucous surfaces, such as the mouth, nose or throat, or as an injection into vagina, uterus, bladder or rectum in an ulcerated or inflammatory condition of these organs. Its value as a disinfectant cannot be estimated, as it gives off, by evaporation, sufficient of its gases to disinfect the sick room and rid it of all offensive or poisonous odors. If the chlorine odor is offensive to the patient that objection may be met by any suitable perfume.

Chloro-phenique is strong enough in its undiluted state for any case or condition in surgery or medicine, calling for antiseptics or disinfectants, while minor conditions are met by solutions of various strengths.

In summing up the qualities of chloro-phenique, we find, first, that in its use we are but following nature's laws ; second, that it can be made of any desired strength of solution ; third, that its disinfectant are equal to its antiseptic properties, and last, but most important, its volatile properties render the atmosphere sterile in the vicinity of the wound to which it is applied, equal to the action of a constant spray.

In conclusion allow me to say that chloro-phenique as an antiseptic and disinfectant has no superior, and we need no other.

Pus Bacillus found in Earth.—Dr. Meade Bolton has found a bacillus in earth, which causes abscesses at the seat of inoculation in various animals. The organism which he terms the bacillus pyogenes soli, is about the size of the bacillus of diphtheria, and resembles the latter closely in appearance. The abscesses following subcutaneous inoculation form within twenty-four hours and last from forty-eight hours to eight or ten days.—*American Journ. of the Medic. Sciences.*

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Though not required for publication, all communications must contain the author's name and address, otherwise no attention will be paid to them.

Editorial Department.

NEW YORK, JULY, 1892.

THE PATHOLOGY OF URINARY FEVER.

Our knowledge of the etiology and pathology of that long recognized, but imperfectly understood, disorder called urinary, urethral or catheter fever, has received a number of valuable additions during the last year or two. At the recent meeting of the American Association of Genito-urinary Surgeons, Dr. F. Tilden Brown, of New York, read an instructive paper which places the subject in a much clearer light. According to Velpeau's theory the disease is due to reabsorption of some of the constituents of fully formed urine, through some traumatic or idiopathic lesion of the bladder or urethra, and this view has recently been defended by Guion. Thanks to the progress made in bacteriology, we are able now to identify the various micro-organisms which are claimed to be the specific cause of the different forms of urinary fever, so that now the vague term, "fully formed urine," is being supplanted by the generic name of some particular microbe or its essential waste product (ptomaine). The ways by which any pathogenic microbe may gain access to the urinary tract are various, in part quite obvious, in part ob-

scure. Chief in point of frequency among the different forms of microbial life which give rise to urinary or systemic sepsis, is the bacterium colli communis, although the urobacillus liquefaciens septicus is regarded of greater virulence. Despite the advances in our bacteriological studies of urinary fever, it will not do to go to extremes and attribute the disease solely to the agency of micro-organisms, to the exclusion of other possible, and, occasionally probable factors. For a long time certain clinical manifestations of the affection have been explained on the basis of the theory of nerve reflex action. Derangements of the urinary organs of functional character, follow not infrequently the use of instruments in the urethra or bladder, even without the supervention of traumatism or sepsis. This local derangement may be associated with systemic symptoms, chiefly of a nervous character. It seems best to employ the word, "shock," not only for those rare cases of sudden death after urethral instrumentation, but also for every grade of functional disorder affecting the urinary system primarily and the organism secondarily, as distinguished from affections of microbial origin. In view of the highly developed cerebro-spinal, as well as sympathetic nervous system of the genito-urinary tract, and the close sympathy existing between correlated organs, it is quite explicable why a temporary renal disturbance might follow a trifling trauma, inflicted upon a hyperesthetic urethra. If a functional renal disorder be thus initiated, this might lead to a failure to eliminate physiological waste products (leucomaines), which would give rise to symptoms of general systemic disturbance or poisoning. In this way, without the intervention of micro-organisms, a condition of sepsis might be produced; so that it is quite conceivable that not only the evanescent, but the more continuous types of urinary fever may have their starting point in shock.

We desire to call our readers' attention to the large number of valuable original papers in this issue, which have been especially written for the JOURNAL. Owing to this embarrassment of riches, we have been compelled to omit the abstracts from exchanges and translations, and the proceedings of the Gynecological Section of the American Medical Association which will appear in the August number.

Original Articles.

THE PRESENT STATUS OF THE SURGERY OF THE VERMIFORM APPENDIX.

BY JOHN A. WYETH, M.D.

Professor of Surgery at the New York Polyclinic, Visiting Surgeon to Mt. Sinai Hospital.

The achievements of modern surgery are the just pride of our profession; they have won for it and us the admiration and gratitude of mankind. Even in this wonderful age of mechanical invention, it is safe to say that in its proper sphere, the alleviation of suffering and the preservation of life, surgery has not been surpassed in marvelous progress. Ether, chloroform and cocaine have already saved millions of beings from untimely death and are destined for all time to compound the sum of human health and happiness. Who can compute the ultimate results of the work begun by such men as Ephraim McDowell, Marion Sims and Joseph Lister. Genius like that of Watts and Fulton; Stephenson, with his "bottled sunshine;" Morse and Vail and Henry; Whitney, Howe and Hoe, Bell and Edison and others, may justly claim the tribute of man's admiration; but to Simpson, Morton, Long, Jackson and Koller, and the other great discoverers in our art, with an equal admiration, he adds that fuller measure of his gratitude.

One need go no further than the subject of this paper for a demonstration of the rapid progress in surgery. The morbid anatomy of the appendix vermiciformis has only recently been understood, and with this knowledge, came at once the great improvement in the operative treatment of its lesions.

The name of Dr. Simon Baruch, of New York City, should, in my opinion, stand prominent in the list of those to whom we are indebted for this very important advance. It was from a case in his practice that on Feb. 8, 1888, Dr. Henry B. Sands reported to the New York Surgical Society "*An account of a case in which recovery took place after laparotomy had been performed for septic peritonitis due to a perforation of the vermiform appendix.*"* The patient, a lad, was under the care of Dr. Simon Baruch of New York, a physician not only of large experience and unsurpassed skill in diagnosis, but a man who possesses the courage to carry out what his judgment affirmed. Dr. Baruch saw this patient on December 29, 1887, at 8 A.M. Since the previous afternoon he had experienced considerable pain in the lower abdominal region which grew worse in the night, the increase of pain being accompanied by several attacks of vomiting.

The right iliac region was exquisitely tender to the touch, the balance of the abdomen only tender on deep pressure. Slight tympanites. Pulse 120, respiration 36, temperature 102° F. A turpentine enema was ordered, and all food and drink withheld. Poultice to lower abdomen. 1 P.M., pulse 120, respiration 30, temperature 101°. Pain relieved by poultice and emptying of lower bowel by enema. Ordered small quantities of beef tea. 8 P.M., pulse 116, respiration 30, temperature 101.4°. Patient comfortable.

At 8 A.M., December 30th (the second day) pulse 130, respiration 30, temperature 101.6°. Had taken five ounces of beef tea, two ounces and a half of milk. No vomiting or nausea, and local tenderness lessened, tympanites increased, dullness on percussion over region of appendix. Despite the absence of pain, nausea and vomiting, and the patient's expression of being comfortable, Dr. Baruch, basing his opinion on increased pulse rate and tympanites, the continuing exquisite, sharply defined tenderness and localized dullness, decided that the time for action had come and called in surgical aid. No tumor could be felt by rectal examination or by direct palpation.

Operation at 4 P.M., forty-eight hours after the onset of the attack; ether, vertical incision over the region of the appendix. Tissues just beneath the skin edematous, peritoneum thickened and opaque, on its incision a small quantity of gas and about an ounce of fetid pus escaped. The peritonitis was not general, was evidently recent, spreading and severe. A spherical faecal concretion about a quarter of an inch in diameter was found lying free in the peritoneal cavity. A similar concretion had partly escaped from an opening at the commencement of the vermiform appendix, which was not gangrenous. The margins of the opening were freshened with scissors and brought together with silk sutures. The diseased parts were irrigated with warm water (about 105°) and afterward syringed out with half a pint of 1-1000 bichloride solution, the upper part of wound closed, the intestines walled off with iodoform gauze, the wound packed with the same material; bichloride gauze and cotton over this. The temperature fell within an hour to 98.5° and convalescence was uninterrupted.

I have reported this case at length, not only on account of its historic value—for it was the first case in which the operation had been done after a diagnosis of perforation of the appendix, which attracted the attention of the profession at large—but the history of this case is important since it is practically the history of those cases which demand immediate surgical interference.

A proper conception of what we once termed "perityphlitis," now properly named *appendicitis* and

* N. Y. Medical Journal, Feb. 18, 1888, p. 197.

peri-appendicitis will depend upon a careful consideration of the anatomy of the organ in question. Quoting from Quain is this description : " Coming off from the inner and back part of the cæcum at its lower end is a narrow round and tapering portion of the intestine named the appendix caeci or *vermiform appendix*. The width of this process is usually about that of a large quill, or rather more, and its length varies from three to six inches ; these dimensions differing much in different cases. Its general direction is upwards and inwards behind the cæcum and after describing a few slight turns it ends in a blunt point. It is retained in its position by a small fold of peritoneum which forms its mesentery. The cæcal extremity is hollow as far as its extremity, and its cavity communicates with that of the cæcum by a small orifice sometimes guarded by a valvular fold of mucous membrane."

Of course, the anatomical relations of this organ vary from this most frequent position, but in the large proportion of subjects the above relation prevails.

In this unfortunate position, it cannot escape many accidental lesions. Its lumen communicating with the great pouch, the largest part of the alimentary canal, into which is being poured during a good portion of the time, semi-liquid ingested matter, and various undigested particles under considerable pressure, no matter what position the subject assumes, it is no wonder that these contents find their way into this organ. Once in, the tendency is to remain; for this diminutive process has little peristaltic power to empty itself. Hence by pressure of solid particles or by faecal enteroliths formed by partial evaporation of the liquid contents, ulcers are formed and perforation, more or less rapid and complete, may occur with escape of gas or other contents, or without perforation inflammation may be instituted, which spreads through the walls and fires up the peritoneum in immediate contact. Moreover, pressure of the overlying and usually filled cæcum directly upon the appendix must be an additional factor in the interference with its proper nutrition and the resulting breaking down.

Again when distended with gas, or even when empty and small, such is its unfortunate position that this pressure may shut off a proper blood supply and cause gangrene, general or localized. Pressure is undoubtedly increased in the sitting posture and this may, in part, account for the frequency of appendicitis in those of sedentary habits.

From the above we can satisfactorily explain all the various lesions which are found post mortem or during operative exploration, from the mild catarrhal inflammation of the lining membrane, to the deeper process spreading without perforation to the peritoneum; the general rapid gangrene of the entire organ

with rapidly developing peritonitis, rupture and collapse; the slow perforation by direct pressure of a foreign substance; and ulceration and perforation as a result of local gangrene in an appendix either empty or containing only a small quantity of gas.

Catarrhal appendicitis is the simplest and most innocent variety. The symptoms vary with the intensity of the catarrhal process and with its recurrence. Pain is usually mild, fever not present, and tumefaction or local abdominal resistance absent. When the inflammatory process involves the entire wall of the appendix and the peritoneum is commencing to be involved, pain becomes a more prominent symptom, tenderness localized on direct pressure with the point of a single finger is evident, abdominal resistance is noticeable, adhesions occur as the peritonitis extends, agglutinating contiguous surfaces and happily hedging in the commencing suppuration and abscess; septic fever, tympanites, and increased pulse follow as a rule, varying with the intensity and rapidity in the spread of the inflammation.

General gangrene of the appendix is the most formidable of all these lesions, and death may ensue within a few hours, such is the suddenness of the onslaught and the rapidity of the gangrene and even before rupture, such is the widespread peritonitis produced and consequent shock and collapse.

In *local gangrene* and *ulceration* the general peritonitis may be prevented by fortunate early adhesions, but the perforation is usually sudden enough to permit the escape of gaseous or other contents, with rapidly developing peritonitis.

When foreign particles find lodgment in the appendix they may produce a mild form of inflammation, recurring with varying frequency (recurrent appendicitis) causing adhesions, the attacks gradually increasing in severity until either symptoms of obstruction are present or abscess and general peritonitis ensue.

It seems to me that a better understanding of these various forms of appendicitis and the indications and methods of treatment may be arrived at by the study of certain cases in each group.

It is to the rapid perforation and the gangrenous forms of appendicitis that the greatest importance attaches. Of the former I have narrated one case. Allow me to give the history of a second patient, in which I was personally interested. You will find it reported by Dr. Baruch in the *Medical Record* for April 30, 1892. This gentleman was called to Long Branch, New Jersey, to see a lady about thirty-five years of age who, twenty-four hours before, had been seized with a severe pain in the right iliac region. She had been treated for peritonitis by the administration of Rochelle salts and morphia. He found

her with a temperature of only 100°, finger tips and nose and ears cool, anxious countenance, rapid pulse and respiration. There was exquisite tenderness over the anatomical location of the appendix and localized dullness on percussion. The critical condition of the patient was diagnosticated and operation urged. I saw this patient about midnight; it seemed imperative to operate and this was done at once. On cutting through the peritoneum over the region of pain and dullness and pushing aside one or two loops of small intestine which presented, a small quantity of pus (about two drachms) was seen at the base of the cæcum. A nodular and inflamed appendix was found containing a faecal concretion, whose sharp edge had perforated the appendix. Recent fibrinous exudation (with slight adhesions) and pus mixed with bubbles of fetid gas were found in the vicinity. The pus was carefully sponged away to avoid its diffusion as the operation was proceeded with, the appendix was carefully dissected out, tied one-fourth of an inch from its junction with the cæcum with a strong silk ligature, divided and removed. The stump was rendered aseptic by rubbing it thoroughly with a bichloride tablet. The pelvic fossa was carefully cleansed with warm water and dried out with sponges. The intestines were walled off with layers of iodoform gauze, the wound closed above, and the remainder filled with the gauze; a dressing of sterilized gauze was applied over all, with slight compression.

Pulse, respiration and temperature fell within one hour, all symptoms of shock passed away, and the patient made an uninterrupted recovery.

In *gangrene* of the appendix the symptoms do not differ materially from those in perforation of this organ. The following may be taken as a typical case. It occurred in the practice of Drs. Walker and McBurney, of New York.[†] "A man, fifty-six years old, heavy build and in excellent health, was seized quite suddenly at 9 P. M. with nausea, vomiting and general abdominal pain. His temperature remained at 100° until evening of next day. Forty-eight hours after the onset of the attack the abdomen was moderately distended, rigidity of right abdominal muscles was highly developed, and great tenderness on pressure was noted at the ileo-cæcal upper region. He had the gray tired look of commencing sepsis. Within two hours the temperature had risen from 100° to 102.5°, the pulse was full and bounding. At midnight, fifty-one hours after the attack began, the operation was performed. The appendix, curved like the letter S, five inches long, as large as a man's thumb, extremely distended with soft faeces and completely gangrenous, was found lying to the outside of the ascending colon well in the loin. It was

not perforated and there was no pus. The usual toilet and dressing was done and the patient recovered.

Subacute and chronic, or recurrent appendicitis. The two following cases will, I think, suffice in the study of this group.

In April, 1890, a young man about twenty years old, came to me from Dr. Ground, of New Hampshire. He had had twelve attacks of appendicitis in eighteen months. They had varied in intensity, were generally not severe. There was always pain in the right iliac region, abdominal tension (often mistaken for tumefaction), and occasionally a temperature as high as 101° F. He was incapacitated for work from one to two weeks during each attack. While preparing him for operation an attack came on with the usual symptoms of other seizures. It subsided in ten days, and I then removed the appendix which was adherent to the iliac fascia. The peritoneum was thickened and there were numerous adhesions about the cæcum. The appendix was not more than one inch in length, about three-eighths of an inch in diameter, was empty and not inflamed or seemingly diseased. The patient recovered promptly and has not had an attack since that date, notwithstanding the character of his work which is that of a porter at a hotel.

A young man in excellent general condition had within six months prior to January, 1892, three attacks of pain in the right iliac region. A month after the last attack I examined and found the *tender point* and a well defined swelling about as large as a walnut. I operated on this case and found a small distended appendix, thickening of the peritoneum with adhesions forming the tumor which had been recognized by palpation. Dressing as above and uneventful recovery.

When appendicitis occurs in which the inflammation extends gradually, yet steadily through the walls of this organ, involving the peritoneum, adhesions rapidly occur, and suppuration being established, the pus is circumscribed or walled off from the general peritoneal cavity and produces the usual symptoms of abscess, along with localized or general peritonitis. In this variety there are not present the symptoms of shock which characterize gangrene, perforation or rupture of a peri-appendicular abscess. Though less dangerous, these cases require unremitting vigilance. It is true that in many instances resolution occurs, even after well-marked tumefaction is present, with fairly high temperatures, tympanites and local peritonitis, but I believe in these cases the tumefaction is chiefly due to localized muscular tension and to limited peritonitis with adhesions rather than to abscess. In these cases of gradually developing peri-appendicular abscess the surgeon should be prepared for operation in the first few days of the attack. The

[†] Medical Record, April 6, 1898, p. 424.

sharply defined limit of tenderness, increasing swelling and muscular resistance, persistent high temperatures (101° to 102.5° F.), and tympanites, all point to increased formation of pus and strongly suggest operative interference. If all such cases were thus early operated upon, the general mortality after periappendicular abscess would, in my opinion, be greatly decreased.

Within the last few months I have seen three such cases perish from rupture of the abscess between the seventh and tenth days from the first symptoms of the attack, and in each of these the conditions were very favorable for operation after the abscess was well advanced. In one, operation was advised on the fifth day but declined. The patient died from peritonitis and collapse on the tenth day. An enormous abscess filled the right ileo-cæcal region and had ruptured. In the second case on the night of the eighth day the patient "felt something give way;" collapse ensued, and as he was moribund I declined to operate. He died in two hours.

In the third case on opening the abdomen fetid pus was found in the general peritoneal cavity, and although a careful toilet was made he died in five hours. His condition was considered desperate and almost hopeless at the time of operation which had been too long deferred.

In cases of suspected abscess I do not think we should use an aspirating needle in exploration. It may be followed by serious consequences. When the symptoms point to pus accumulation, the most surgical procedure is to cut down upon the swelling. If adhesions have occurred and you get directly into the abscess, the treatment is the drainage tube and irrigation with Thiersch's solution. If the general peritoneal cavity is first entered, the abscess can be readily recognized and located by enlarging the incision in the abdominal wall if necessary. Rather than risk the escape of pus into the peritoneal cavity a posterior opening should be made, entering the abscess through formed adhesions and draining out from behind. The anterior incision facilitates the entrance to the abscess from behind. The anterior wound should be closed throughout. If only a very small pus sac is found it may be opened, its contents sponged out, the cavity scraped and cleansed with sponges, rinsed with 1-1000 bichloride solution, and the wound packed with iodoform gauze. No posterior incision is indicated here.

When an abscess has burst into the general cavity, a thorough and careful toilet should be performed, everything sponged out dry, especial attention given to the pelvic cavity. Iodoform packing is demanded.

Operative technique in the removal of the appendix.
An incision about five inches long is made through

the abdominal wall parallel with the linea alba. The center of this incision should be about one-half of an inch below a line drawn from the anterior superior spine of the ilium to the umbilicus. All bleeding should be stopped by ligature before the peritoneum is opened. When this is done any loops of small intestine which may protrude, should be gently pushed toward the median line and held away by sterilized gauze napkins. The cæcum is readily seen, and may be recognized by the longitudinal band, which, if followed downward, leads directly to the appendix. Should no adhesions be found, the end of the cæcum may be slightly lifted and thus bring the appendix into view, when it can be dissected from its peritoneal attachments commencing at the apex. About one-fourth of an inch from its junction with the large intestine, a strong silk ligature is applied around it, and the appendix cut away with the scissors from one-eighth to one-fourth of an inch beyond the ligature. The end of the stump is rendered aseptic by thoroughly applying over its cut surface a solid tablet of mercuric bichloride. The ends of the ligature are cut off close to the knot after the toilet of the peritoneum. A piece of rubber tissue protective, disinfected by immersion in 1-5000 cool bichloride solution, is now placed so as to wall off the small intestines from the stump, and against this tissue is placed the iodoform gauze which fills the wound and projects to the surface through its lower one or two inches which is not closed by sutures. The rubber tissue is used because it does not adhere to the intestines as does the gauze. The upper remaining portion of the wound is closed as after an ordinary laparotomy. This dressing may remain for from three to ten days, preferably about seven days when the gauze and tissue protective are pulled out, the wound irrigated with 1-3000 bichloride solution. A small strip of iodoform gauze or a soft rubber tube may be carried down to the bottom of the wound to insure drainage, and this finally removed in another week or ten days. For fear of ventral hernia the patient should keep in bed for four or six weeks, to permit the lower part of the wound to close by strong cicatricial adhesion.

When adhesions between contiguous loops of intestine and the appendix or cæcum are met with, these should be carefully separated, and upon the discovery of pus or extravasated matter, this should be mopped out with sponges, taking care to prevent, if possible, the contact of septic matter with the general peritoneal cavity. The use of sterilized gauze napkins may aid in walling off the general cavity.

When the appendix is gangrenous or greatly distended, or has already been perforated, very considerable care is essential in dissecting it loose, either to prevent rupture or to avoid the escape of its contents.

When a large agglutination is encountered and the presence of a large quantity of collected pus is evident, it is safer to use the anterior incision which led to this discovery, as a guide to the entrance of the abscess from a posterior and retro-peritoneal incision through which drainage can be effected. The anterior wound can then be closed throughout by sutures; if not contra-indicated, I prefer good sterilized silk for sutures, passing through the skin, and carefully going through each layer of fascia and muscles, and the abdominal peritoneum at least one-fourth of an inch from the cut edge of the peritoneum.



Dorsal Position for operating on Fistula in Ano.

When a general toilet of the peritoneum is indicated, I prefer irrigating this cavity with sterilized water (just boiled and allowed to cool down to about 100° F.). This is carried in from an elevated irrigator through a stiff blunt gutta percha tube (boiled before using). As the general peritoneal cavity becomes filled, the fluid flows out through the opened wound.

The remainder is sponged out until the cavity is dry and clean. I have once made a second opening in the median line in order to drain the deep pelvis. This is rarely indicated.

In conclusion it may be said that, contrary to former teaching, so-called perityphlitis and perityphilitic abscesses are intra-peritoneal lesions. They seemed to be retro-peritoneal after adhesions had taken place.

HOW TO DEAL WITH FISTULA IN ANO.

By JOSEPH M. MATHEWS, M.D.,
LOUISVILLE, Ky.

I once heard the elder Allingham remark that, in his opinion, it required more surgical knowledge and dexterity to operate on, and cure a complicated case of *fistula in ano*, than any other surgical affection. The more I meet with this very troublesome disease, the more I am persuaded of the truth of this assertion. I wish it were possible to collect the statistics of the uncured cases of fistula, after operations for their relief. Many, very many persons, who come to me for an operation, mention the fact that they have been operated on before for the trouble. I must say I believe the books are responsible for many of these bad results. Too little attention is given by the authors to the minutia or details of the operation. For instance, Bryant, in his most excellent work on surgery, says of the operation for fistula in ano: "The operation consists in the insertion of a grooved director through the fistulous sinus, then with a knife, divide all the tissues upon the director." Now, in truth, this amount of operating would not cure one in six cases, and yet this is about the substance of what the majority say in regard to this operation. Van Buren once thought that by the division of the main channel of a fistula, inflammation was excited sufficient

to eradicate the branch fistulae. This, however, has been proven to be untrue.

For the want of space in this article, I will not deal with the manner of treating fistula in ano by any other method than with the knife. I know that the elastic ligature has had strong advocates in Dittell, Allingham, and some others, but the procedure

seems unsurgical and withal so unsatisfactory that but few surgeons have given the plan much endorsement. I must confess that the more I have used the elastic ligature in the treatment of fistula in ano, the less I like it. It must be conceded that where branch fistulae exist, the treatment would be a positive failure. These sinuses are lined by a tough, cartilaginous, so-called pyogenic (?) membrane. Inflammation excited by the ligature going through the main sinus, will not be sufficient to close the smaller branches. Then, too, remembering that the ligature only cuts from the sinus *outwards*, it is easy to understand that the base or bottom of the sinus is left untouched, and granting that the wound heals, the sinus is still left.

Again in this day of clean, antiseptic surgery, no operator would desire to see pus flowing from the wounds made by the elastic cord. This condition of things must necessarily obtain because no such wounds could be properly dressed. There are other reasons for objecting to this method, but it is not the desire of this article to deal further with the plan.

When compared with the knife in operating for fistula, all other methods must suffer by the contrast.

What can be accomplished by the knife in a few minutes, takes days or weeks for the other plans of treatment to do; edges of wounds can be trimmed, additional sinuses sought for and divided, the bottom of all cut through, antiseptic surgery be practised, and a perfect cure effected when the knife is used.

Diagnosis. As far as diagnosticating fistula in ano is concerned, that is quite an easy matter, but to tell exactly the character of the fistula we have to deal with, is quite another thing. An operation that will cure one fistula, will not cure another. Therefore, no general rule will apply to these cases. There are several things to be taken into consideration in properly diagnosticating or prognosticating a case of fistula.

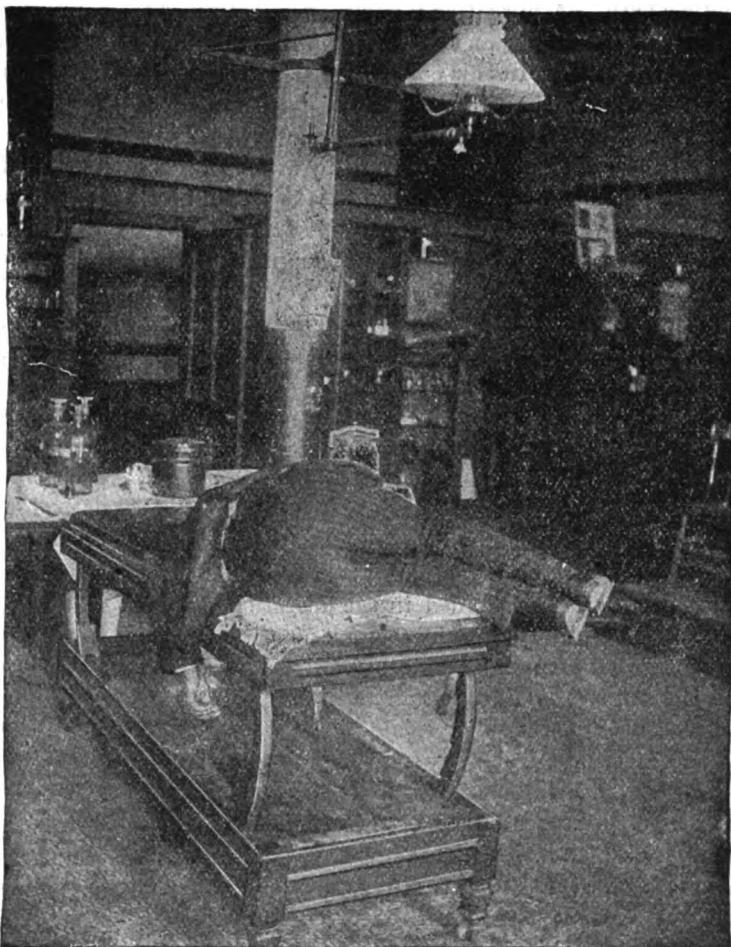
1. Is it a simple fistula and has it but one channel?
2. Is it a progressive or non-progressive fistula?
3. Is it due to any special diathesis, as tubercular, syphilitic, etc.?
4. Does it exist as a disease *per se*, or is it the result (secondary) of stricture?

These are essential considerations and will decide the method of operating and after treatment, and the prognosis.

To illustrate: If the case is one of simple fistula with but one channel, a single division of tissue, either by the knife or ligature, will effect a cure.

If it is a progressive fistula, with a great discharge of pus, and a rapid breaking down of tissue, an operation *by the knife* should be advised at once. If it is non-progressive, no hurry need be had and the patient can adapt himself to circumstances.

If the disease is due to any special diathesis, such diathesis must be ascertained in order that the proper medical as well as surgical treatment can be afforded.



Lateral Position, should the necessity of the case require this posture.

Indeed, upon this is decided the question whether an operation is warranted at all.

If the fistula be secondary to a stricture of the bowel, no operation is permissible until the strictured condition is righted.

I consider, therefore, that these are points of much more significance than to determine whether the fistula be an external, internal, or complete one. It has often occurred to me that the authorities put too great stress upon this division of fistulae. It matters very little to the surgeon who is going to operate, which variety he is going to deal with, for he is going

to do pretty much the same operation in all. It is the complications that concern him, not this kind of division.

Plan of treatment.—Having then taken into consideration the points that I have named, we conclude that it is a case which calls for an operation. It is much in the surgeon's favor if he can have the advantage of his own operating room. In this room I have everything in readiness to do an antiseptic operation. If the case is one of any moment, I direct that the patient be given a bath the evening preceding the operation. The next morning he is to be given another bath. A purgative is administered the night before the operation; an enema one hour before he is put on the table. In this connection, I will say that to the rectal surgeon as well as to the gynaecologist, a good operating table is *absolutely* necessary. Many times I have been much chagrined by attempting to do these operations upon the bed of the patient. I have tried several makes of "chairs," but have never succeeded in getting one that was adapted to this work. I have now in my operating room a Nedofik Sofa, which answers the purpose so admirably that I desire to call attention to it. As will be seen, it can be thrown into a number of positions, admirably suited to the rectal surgeon. Being made of firm material and one continuous surface for the top, it has all of the advantages and none of the disadvantages of many of the chairs or tables in the market.

The patient is put upon the table in position, No. 5, when the nurse thoroughly washes the external parts which will be included in the operation, with a solution of bichloride of mercury 1-5000, the parts being shaven. Ether or chloroform is administered and the patient is then put in position, No. 9, and the rectum is thoroughly irrigated.

If an external opening exists, the grooved director is inserted into it and allowed to follow the sinus with little pressure, at the end of which time, more force is used, and then the index finger of the right hand is pushed into the rectum, and if the director has not entered the gut, it is forced through the intervening tissues and mucous membrane. If the tissues are not so abundant on the director as to prevent the pulling out at the anus of its distal end, this is done. If there is any difficulty in so doing, I content myself in cutting down on it, the object being only to cut through all the tissues held on the director. The irrigator containing the mercuric solution is allowed to play over the wound. All additional sinuses are now diligently sought for and laid open. I will be permitted to say here that by the time this is done in some cases, wounds will have been made into which the hand could be easily lain. It may be that an entire buttock has been sacrificed, or the

sphincter muscle destroyed by the operation. The surgeon can be content, for no less amount of surgery would have accomplished the aim. If the patient be a female, she would much rather have sacrificed her ovaries and tubes than her sphincter muscle, and yet the ravages of fistula in ano are sometimes so extensive that these muscles must be sacrificed in order to stop the progress of the disease. After all channels have been divided, any bridges of flesh cut away, all edges trimmed, the bottom of all sinuses divided, hemorrhage stopped by ligature or hot water, the parts are then dusted freely with iodoform, bichloride gauze is gently packed in the wounds, absorbent cotton placed over it and a T bandage applied tightly. This latter admonition is in order to control hemorrhage. The patient is then put to bed. Usually a hypodermic injection of morphine is given, and hot water as a drink if nausea supervenes. The nurse is directed to look after the kidneys and to draw the water if necessary.

This dressing is not removed until the morning of the third day, when a purgative is administered, aided by an enema when a desire to go to stool is felt. The wound is now dressed after the manner of the first dressing; irrigation with bichloride solution 1-5000, iodoform gauze, cotton and T bandage. This is repeated every day. If the wound shows any disposition to sluggishness, I order it to be syringed daily for several days with Marchand's peroxide of hydrogen. We must never neglect at each dressing, to be on the alert for "pockets" or the extension of some sinus. Whenever or wherever found, they must be divided.

I consider the after attention of these wounds to be as important as the operation itself, and the surgeon who hopes to get perfect results when trusting the after treatment of fistula to second hands, will be often mistaken. Under the plan of treatment as mapped out here, I believe the great majority of cases of fistula can be radically cured. I am equally sure that if these details are not followed, the majority of them would not be cured, and I will add in conclusion that by this plan of treatment the largest wounds will be made to heal without a drop of pus.

PUERPERAL FEVER.

BY WILLIAM R. PRYOR, M.D.,
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This clinical designation for a complexity of lesions is rather unscientific, but yet convenient. By the profession at large the term puerperal fever is applied to cases occurring about full term, merely because the disease is then most frequently seen.

Causes.—Auto-infection is only possible when the woman is already infected in some other part of her body by pyogenic germs. So rare indeed is this that the postulate is proper : that every case of puerperal fever is due to infection which enters the system per vagina. If we assume this to be true, we stand on ground from which a clear field of vision is possible. The causative pyogenic germs present in every case of puerperal fever are to be found naturally in nearly every healthy vagina, in about half of the normal cervical canals, but never in the healthy endometrium. The internal os seems to be the limit of their extension in nature. It appears that breaks in the uterine tissue above the internal os and the placental site, constitute propitious culture-fields for septic germs. Tears in the cervix and perineum are not much subject to septic changes of marked degree, and systemic infection from such lesions is rare. In normal untouched cases the placental site could with difficulty become infected. But when attached low down, as in *placenta praevia*, infection is exceedingly common. So, too, manipulations and examinations which extend beyond the os internum act as carriers of the germs, and often at the same time bruise the tissues. When infection has occurred, pyogenic germs are firmly implanted hours before the appearance of the first symptom. The germs invade the periuterine tissues in two ways : by direct tissue extension through the tubes ; but in the vast majority of cases and most rapidly by means of the uterine lymphatics. Hence, in holding an autopsy on a fatal case of puerperal fever, we find the uterus sloughing, with numerous foci of pus in its walls, the placental site often gangrenous, the broad ligaments riddled with more or less extensive pockets of pus, free pus in the abdomen with lymph and serum, adherent guts, and often enormously enlarged lymphatics extending to the diaphragm and loaded with pus, with an occasional pus tube and a fairly frequent ovarian suppuration. The reason *pyosalpinx* is not more frequent is found in the natural closure of the uterine end of the Fallopian tubes by the pregnancy. The point I most wish to insist upon is that the sequence of pathological changes is as follows : a septic endometritis, metritis, pelvic lymphangitis and peritonitis, with general systemic infection. These are the chief lesions. The tubal and ovarian involvement is insignificant in the production of immediate serious results. I only wish I could here reprint the grand article of Leopold and the work of Cruveilhier in full; the one showing the anatomical reasons for the pathological occurrences so beautifully depicted by the other.

The prevention of puerperal fever cannot be treated of in this short article. The disease will occur sometimes despite the utmost care, and the great question

with us all is what to do when brought face to face with this most frightful curse of our civilization.

Treatment.—It is not the specialist who first sees these cases, but the family physician. Upon his shoulders falls the responsibility of treatment at the time when interference does most good. If the stomach be in good condition, I give quinine sulphate, grs. v, q. l. h. ad four doses, to eliminate any malarial element which so often clouds our diagnosis. If the stomach be irritable, thirty grains may be given in tartaric acid solution by the rectum. I do not wait for the drug to act, but at once begin the local attack on the disease. After cleansing the genitalia, my hands and the catheter, I introduce into the uterus a linen catheter, No. 15, and wash out the uterus with quarts of a solution of bichloride of mercury 1-4000, at a temperature of 110° F. After this I always wash away the mercury solution with boiled water to which has been added table salt, a heaping teaspoonful to the quart of water. If the case has been seen within a few hours after the onset of symptoms this one douche will often suffice. But if the temperature does not fall in two hours I advise a continuous irrigation. This is accomplished by introducing into the uterus a catheter and allowing to flow through it continuously, warm saturated solution of boracic acid or boiled salt solution. The catheter should first be boiled, and is readily introduced with the finger as a guide, the patient being on her back. The catheter must be fastened to the pubes by means of rubber plaster. This continuous irrigation can be arranged by the physician, and left in charge of any intelligent person to keep the bucket full. The syphon action is employed, the bucket holding the solution being above the bed. Double current catheters are not necessary, as the cervical canal is always well open. Many patients either die or have a complicated convalescence because the washing is done every few hours. The irrigation should be kept up for some hours after the temperature falls, and should be followed by occasional intra-uterine douches of bichloride 1-5000 or even 1-10,000, for some days, or until shreds of tissue cease to appear in the washings. After this a pencil of iodoform, grs. xx, may be introduced into the uterus and the patient let alone. There is absolutely no risk of water entering the tubes. Painting the endometrium with carbolic acid, swabbing it with cotton, and occasional washings are to be condemned as insufficient and time wasting.

If the case be seen late, or if the continuous irrigation persisted in for twelve hours fails to subdue the symptoms, what is to be done ? From so many quarters has laparotomy been advocated for the relief of puerperal fever that I must say something against it, although I intended to discuss in this paper only those

measures which have given me the best results. So trivial a factor is infection of the tubes and ovaries in puerperal fever, that it is rash and almost criminal to perform a section for their removal to cure puerperal sepsis. All women who have puerperal fever do not die, only about a quarter. That twenty-five per cent. will die anyway if salpingo-oophorectomy be performed. And added to the common mortality of the disease must be that of the operation. It is my belief that laparotomy for the removal of the adnexa during puerperal fever has a mortality of at least forty-five per cent. And when there exists general purulent peritonitis post-partum, I believe the rate of mortality is one hundred per cent.

Laparotomy done here removes organs but little diseased and not factors in the causation of the trouble. It leaves behind the rotten septic uterus. It would be about as rational to lance an axillary abscess to relieve a phlegmon of the hand, or open a bubo and expect that to check the causative gonorrhœa. If a man can see pelvic inflammations only in the light of their results, and is irresistibly impelled to do a laparotomy in these cases of puerperal fever, he should remove the whole organ.

In a number of articles, and before the New York Academy of Medicine, I have advocated another operation for the relief of these cases. If the continuous irrigation fails, or if the case be seen after the symptoms have persisted for a day, no matter how grave the symptoms, I curette the uterus and pack it with some absorbent dressing. The infection is too deep seated to be touched by the washings or applications, and the organ must be treated as any other septic discharging sloughing cavity. The system with healthy emunctories can eliminate a profound degree of infection, provided the supply be cut short before the viscera become involved. Purgation to a limited extent by salines is demanded. Diuresis is always present if the kidneys be normal, and is a great help to us. Therefore, if we can prevent the uterus acting as a further source of sepsis, we will limit the lesions following the infection. Curetting will not remove pus from the broad ligaments, lymphatics or elsewhere. But it certainly tends to limit the infection by attacking the causative focus, and thereby gives the body a possible chance to protect itself by the process of encapsulation, against the damages already done. Curetting the uterus for puerperal fever is offered as a generally curative procedure when irrigation fails, and as a substitute for a useless and generally fatal laparotomy. The operation requires but few instruments. A short-billed wide Sims speculum, a fairly stiff catheter, a sharp curette, a pair of stout American bullet forceps, long dressing forceps, Hunter's sound and a syringe. The

patient is in the lithotomy posture, and under ether if possible. The hair on the genitals should be cut short and the privates and vagina scrubbed with soap, nail brush, and bichloride. A few boiled towels at hand and five yards of iodoform gauze (5 per cent.). All instruments should be boiled, and the operator and assistants prepared by nail-brush, soap and bichloride. The object is to do a clean operation in a clean field. The speculum is used to depress the perineum, and the anterior lip of the cervix is seized well into sound tissue by the bullet forceps and pulled down. The catheter is introduced into the uterus and the cavity irrigated with bichloride 1-5000. I then curette the whole inside of the organ, working on a system by beginning at one cornu and going all around the cavity. The fundus is the hard part to get at and requires a lateral sweep of the instrument. When I have gone over the whole endometrium, I wash out with the same solution, and again carefully go over the inside of the uterus with the curette. This scraping and washing I repeat until I have gotten down to firm uterine tissue. It is the only way the sloughing septic endometrium can be removed. The danger of the curetting lies in the use of a small instrument and introducing it too roughly to the fundus with a poking motion. There are apt to be soft spots through which the instrument may be thrust. When the organ has been sufficiently curetted and washed out, the parts over which the fluid has flowed should be protected by bichloridized towels, and the operator's hands again cleansed before he takes up the dressing. This may be iodoform gauze 5%, or plain mull or lamp wicking. The two latter should be boiled before using. Whatever is used should be wrung out in bichloride solution 1-5000. Some skill is required to introduce the gauze properly. It should be cut into one long strip about one inch wide and four layers thick. But this must be determined by the patency of the cervical canal. It must be packed into the uterus as tightly as possible, sufficiently so to come into apposition with every part of the uterine wall and exercise some pressure. The end is left projecting from the cervix, and the vagina fairly well filled with the same material. These cases require to have the dressing changed the moment it gets soaked through. This will vary from a few hours to nearly three days. Whenever the dressing is changed, the same care should be taken and the same scrupulous cleanliness and irrigation carried out before fresh gauze is introduced. My first operation of this character was done in 1887, on a case of placenta-prævia which became infected. Since then I have done the operation in cases of the most acute infection following labour and abortion very many times. I have never lost a single case so operated upon.

The object of this paper is to present to the man who sees most of these cases two methods of procedure which he can handle perfectly well. Very seldom will he have to resort to the curetting if he is able to use the irrigation in a few hours after the infection begins. The exhibition of pharmaceutical knowledge and material, other than the quinia for the purpose stated, is to be deprecated. Laparotomy is not to be for a moment considered. This paper is written also as a protest against the recent teachings that where applications of caustics and antiseptics fail to cure puerperal fever, abdominal section is to be performed. I know of nothing more unscientific and vicious. Every autopsy shows the folly of it. When irrigation and curetting fail to check the infection, I believe the disease is so disseminated that it is utterly impossible by laparotomy to reach even a small proportion of the purulent foci. Such cases resolve into a struggle between the vital forces and disease, and call for a supporting treatment rather than narcosis and a laparotomy which will rob the woman of what small chances of recovery she may have.

The general practitioner first sees these cases, and into his hands are placed two measures which will cure nearly all cases of puerperal fever if used in time. Both of them are harmless when employed with even ordinary skill.

For myself, when I see a case of puerperal fever early, I feel that the fight is not so much to save the woman's life, as that I may be able to spare her those gross pathological changes in adnexa and pelvic peritoneum which may necessitate a future laparotomy.

My parting word on this subject is never use morphia for the pain. It is a little cruel sometimes, but its use only thwarts us.

If the physician will look upon the hyperpyrexia as but a symptom and not a condition, he will avoid the cold pack and all antipyretics. I look upon it as unfortunate when the patient is given antipyretics; for the reduction in temperature they produce, only prevents an accurate estimate of the benefit that is being derived from the local treatment.

SOME CONSIDERATIONS ON THE TREATMENT OF CUTANEOUS MALIGNANT EPITHELIOMATA (CANCERS).

By A. R. ROBINSON, M.B.,

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It is not my intention in this paper to discuss the etiology of cancer, as at present I could add nothing definite to an elucidation of this most interesting and important subject, although much time has been

devoted to it, and when the experiments and studies are more complete the question will receive attention in a later article. As far as the subject of the present paper is concerned, the views I shall advance concerning the methods of treatment will, from a practical standpoint, hold good whether the view of Cohnheim—the theory of origin from embryonic rudiments—or the parasitic, or the neurotic, or that of diminished physiological resistance power of the sub-epithelial tissues against rebellious proliferating epithelium be correct; for if the disease be caused by an organism, and the organism continues to act upon the epithelium and cause its continuous proliferation after it has invaded foreign territory, it must reside within the epithelial cells, as will be seen when we come to consider the origin of the secondary tumors; or if Cohnheim's theory be correct, the newly formed cells already possess the ability and predisposition to multiply; or if the disease consists in the invasion of foreign territory in consequence of diminished resisting power in the latter, the epithelial cells would still be the offending agent; consequently, whichever of these theories be correct, the complete destruction or removal of the morbid epithelium would be equivalent to a removal of the disease. I might here remark, and for reasons which will be given at another time, that I do not believe that the theory of Cohnheim will account for the local and general infective character of malignant new growths, whether epitheliomatous or sarcomatous.

In this paper I shall make use of the term "malignant epitheliomatous new growth," as synonymous with carcinomatous, whether the new growth proceed from the cutaneous surface, or from a gland structure.

For the elucidation of my views it will be of advantage if we compare the manner of growth in simple tissue tumors with that in carcinomatous new growths. (I prefer the term "new growth" to that of tumor, as I do not believe that either carcinoma or infective sarcomata are to be regarded as examples of tumors proper on account of their mode of origin and clinical course; but to avoid too frequent repetition of a word, will use both terms in the same sense.)

I think it will be admitted by most histologists that the view of Cohnheim as to the origin of the simple tissue tumors, lipoma, chondroma, etc., from embryonic rudiments, is the probably correct one, and that such tumors never arise except in an indirect manner, as the result of an injury to a part. These simple tissue tumors increase in size by continuous multiplication of cells derived from the embryonic rudiments, and as the tumor increases in size by centric growth the tissues of the part in which it is situated are pressed upon, until, finally, the com-

pressed tissue adjacent to the new growth, is arranged as a more or less well-marked capsule, within which capsule all the tumor is contained. There is no infiltration of the tissue outside the capsule, no peripheral extension growth, consequently, an operation which results in removing all the tissue within such a capsule, is equivalent to a complete removal of the tumor, and as the capsule is usually makroscopically easily recognized, the question of the extent of incision necessary in a given case is easily settled.

When, however, we compare the method of growth and extension of cancer, it will be easily seen that the limit of tumor invasion cannot be easily recognized, or even conjectured, and that, whilst removal of all the pathological tissue in either case would be tantamount to a permanent cure, yet the question as to the manner of removal may require to be decided differently in the two cases; in other words, it does not follow either from the manner of origin or mode of extension that carcinoma should be treated in the same manner as a simple tissue tumor, and when situated upon the cutaneous surface, for instance, be removed by the knife as the best method of treatment.

Let us consider the manner in which a carcinomatous new growth extends at the seat of a primary lesion. In Fig. 1, copied from Waldeyer, is shown the manner of extension in cases of carcinoma of the mammary gland, and this method holds true for cancer in any location.

FIG. 37.

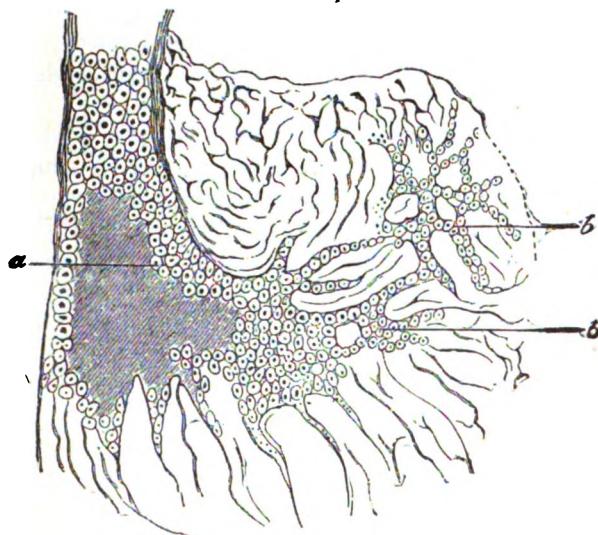


Fig. 1.—An acinus of a mammary gland showing growth of cancer and infiltration of the surrounding tissue (after Waldeyer). *a*, cavity of acinus with proliferation of glandular epithelium; *b*, pathological epithelium travelling along the lymph spaces and infiltrating the tissues.

The drawing represents a terminal acinus of the mammary gland where the epithelium is not arranged

in a normal manner along the basement membrane, but in an irregular manner, and having undergone proliferation, fills up the greater part of the lumen. The basement membrane of the acinus at its blind extremity has disappeared and the proliferating epithelium has invaded the neighboring tissue. The changes occur in the following order: first, there is a proliferation of the glandular epithelium, then destruction of the basement membrane, and finally, infiltration of the surrounding tissue by way of the

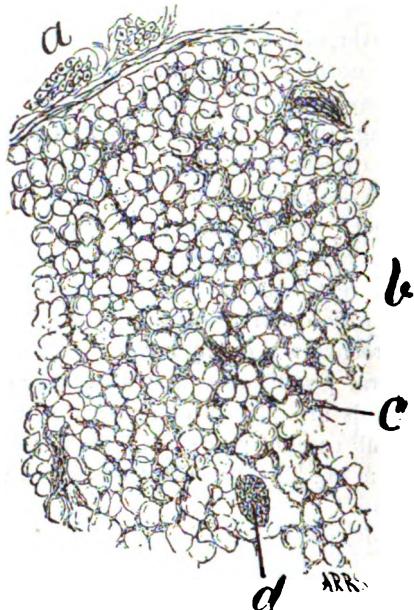


Fig. 2.—Section of tissue from a case of carcinoma of the mammary gland. *a*, cancer tissue from apparent margin of tumor; *b*, fatty tissue throughout entire drawing; *c*, dilated capillaries containing excess of corpuscles; *d*, an isolated group of cancer epithelium.

lymph channels. The nearer the gland the larger the columns of invading epithelium, whilst at the periphery, the infiltrating cells may appear as isolated epithelial elements or columns of epithelium arranged in single file. This drawing shows how the epithelium infiltrates the connective tissue, travelling along the lymph spaces at first, and in the most gradual manner losing itself in the healthy tissue, the foremost of these malignant infiltrating elements being of necessity a single epithelial cell, and a whole column may consist of single cells arranged in file, as shown in this figure and in Figure 6. The new elements in their earliest stage resemble embryonic elements and cannot always be diagnosed with the microscope from such bodies; they furthermore, like these, can perform amoeboid movements and travel from one part to another. The tumor, therefore, spreads not by centric growth, giving a sharp margin easily recognized, but by growth at the periphery, and by an infiltration of the tissue to an extent not recognizable by feel or unaided sight. So insinuatingly and so solitary

in their arrangement do these epithelia sometimes travel in the lymph spaces that even a microscopical examination of the tissue beyond the area of excision, in a mammary cancer for instance, may fail to detect them, and yet the subsequent history of the case, a so-called recurrence, leaves no doubt of their having been present.

To show how this epithelium can travel and locate at a distance from the tumor mass, I have drawn in Fig. 2 the condition in a carcinoma of the breast, operated upon with the knife by myself seven years ago.

The tumor mass was not larger than a small hen-egg and appeared to be very sharply limited, yet this drawing shows that pathological epithelium was present in the periglandular fat tissue at a considerable distance from what appeared to the feel and naked eye as the limit of the tumor. Fortunately, a large amount of tissue was removed, as much as if the

examination with the microscope showed a few epithelia close to the line of incision, and the subsequent history of the case, a recurrence within six months, showed that the incision was not in absolutely healthy tissue. Subsequently, the case was treated by caustics with a more satisfactory result.

The elevated margin ceased at *f*, but there was some slight enlargement of several papillæ beyond that, as also a disturbance in the circulatory system beyond *f*, mild inflammatory changes, not shown in the figure, as the object of the drawing is to show that, although the process seemed to end abruptly at *f*, yet microscopically it did not, as pathological epithelium was found within the corium much beyond that point, and in reality they extended into the supposed healthy tissue beyond the place of incision at *b*, as the disease reappeared within a few months.

In Fig. 4, is represented under a higher power an ordinary epithelioma of the nose in which the infiltra-

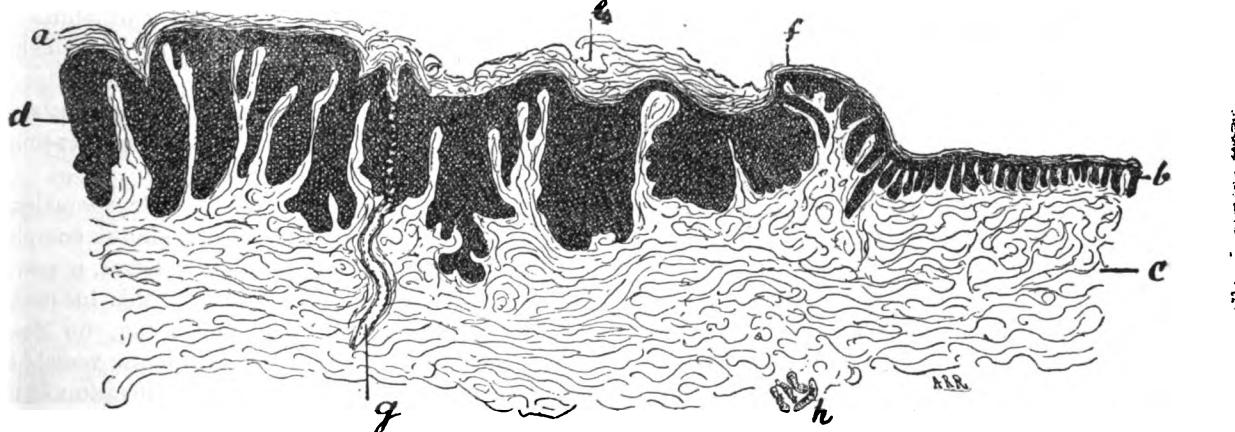


Fig. 3.—Section of a cutaneous epithelioma, from the gluteal region, under a low power. *a*, corneous layer; *b*, normal rete; *c*, corium; *d*, hypertrophied rete (epitheliomatous); *e*, hair follicle orifice area; *f*, apparent limit of morbid process; *g*, excretory sweat duct; *h*, sweat gland coil.

tumor had been many times as large, and there has been no recurrence of the disease. No epithelium was found in the area between *a* and *b*, but individual cells, perhaps, were there and not recognizable. This drawing shows, as does also Fig. 1, that very early in the disease the infiltration has very likely extended to an unexpected distance into the surrounding tissues.

We find the same method of extension in cutaneous cancer, that same infiltration into areas not yet microscopically affected. In Fig. 3, is shown under a low power, a section of an epithelioma of the gluteal region which had grown very slowly, and showed no secondary infection of lymphatic glands, although at the time it was removed by the knife, it was about six inches in length. The elevated margin was very sharply limited and not more than half an inch in diameter. The surgeon who operated, cut about one inch outside of the margin with the object of removing all of the pathological tissue, but subsequent

infiltration into the corium and the secondary inflammatory round-celled infiltration are well marked. The section is from a central part of the tumor and does not show the extent of infiltration at the periphery, but only the manner in which the process extends.

In the so-called rodent ulcer, a variety in my opinion of epithelioma, the extension of the disease is very slow indeed, and in such a case one would naturally suppose that the infiltration beyond the apparent margin of the growth would extend to only a very short distance. Examinations of sections of these new growths, however, have shown the same insidious infiltration in the form of round columns of epithelium, or epithelia in varying numbers in single file, pushing their way within the lymph spaces, or as isolated epithelial elements, advanced pickets, from which groups form later. In Fig. 5, is represented a section of the peripheral portion of such a rodent ulcer, and the similarity of mode and manner of

extending as that taking place in the tumor represented in Fig. 1, is quite striking.

The increase of the tumor by continuous growth of the peripheral cells and infiltration of the surrounding tissue, not *en masse* but gradually, and without

extension whose limit is only to be recognized by microscopical examination.

In Fig. 6 is shown, under a higher power, a single file of epithelia extending in an, as yet, almost normal connective tissue area.

The lower portion of this column represents the most peripheral lying cells, and the last epithelium figured, the most advanced one, appears as a nuclear body with undoubtedly locomotion power and predisposition for further invasion of the tissues.

In Fig. 7, also from a case of rodent ulcer, the epithelium has penetrated the sarcolemma and is causing degeneration of the muscle fibre.

At *a* the epithelium has penetrated the sarcolemma and later would cause degeneration, either simple atrophy or fatty degeneration of the muscle fibre.

At *b*, the degeneration of the fibre is almost complete. There is, it seems, a marked

tendency in some cases of cancer to this infiltration of the muscular structures, depending, no doubt, upon the arrangement of the lymphatic vessels and the comparatively slight resistance to invasion of that area.



Fig. 4.—Section from an epithelioma of the nose. *a*, corneous layer; *b*, rete; *c*, papillæ; *d*, growth downward from the rete; *e*, inflammatory round-celled infiltrated corium.

order, in an irregular manner as regards the line of limitation, produces a condition entirely different from that produced by centric growth, as occurs in the simple tissue tumors. The cells in this disease proliferate more slowly than in mammary cancer, or ordinary epithelioma, consequently the columnar form of arrangement is usually well marked, but the advanced picket arrangement as seen at *c*, shows an

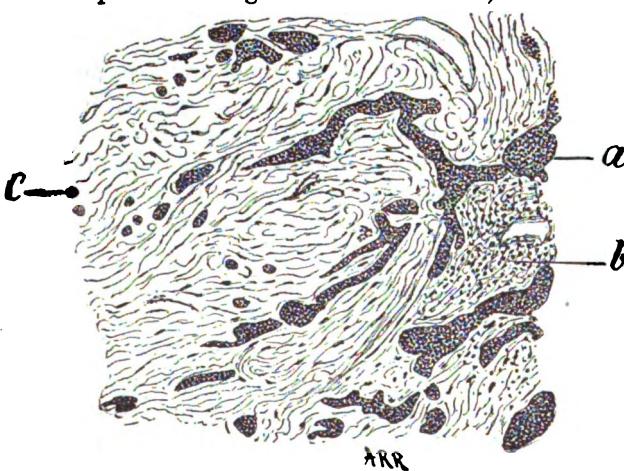


Fig. 5.—Section of the peripheral portion of a rodent ulcer, showing manner of infiltration of the connective tissue. *a*, columns of epithelium lying in lymph channels; *b*, small celled infiltration (inflammatory); *c*, a small group of epithelia.



Fig. 6.—Drawing showing epithelial infiltration, the cells being arranged as a continuous row composed of single cells.

In some cases of mammary cancer the so-called recurrence of the disease after operation appears as an irregular infiltration into the sub-epidermal tissues of the thorax which, when extensive, produces the condition known as *cancer en cuirasse* of Velpeau. A study of the manner in which the infiltration spreads shows that it does not differ from that in other forms of cancer, there is the same travelling through the lymph channels, the connective tissue, when first invaded, being normal, and, later undergoing various degrees of inflammation from as yet undecided factors; but at no time do the connective tissue corpuscles or the fixed elements of any tissue invaded take on such processes as result in the formation of elements having the character or vital properties of the epithelium

derived from the epithelium of the primary seat of the new growth. This statement of the origin of all the pathological epithelium in cancer is opposed to the views of some observers, but in my opinion is so correct that any discussion of the question in this paper is unnecessary.

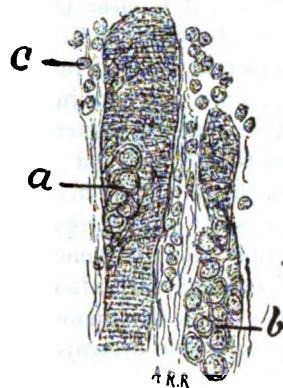


Fig. 7.—Invasion of striated muscle fibres by epithelial cells in a case of rodent ulcer. *a*, cancer epithelium; *b*, cancer epithelium; *c*, inflammatory round-celled infiltration of the connective tissue.

In Fig. 8 is shown a section of a secondary nodule of the skin in a case of *cancer en cuirasse* following operation for the removal of a mammary gland for cancer. The infiltration into the skin and subcutaneous tissue without any appreciable nutritive changes in these tissues, is well shown by the absence of all signs of inflammation in the connective tissue, and although pathological epithelia are present in large numbers close to the epidermis, yet the epithelia of the latter do not undergo proliferation ; they would, however, have undergone a destructive degeneration at a later stage.

This drawing, like some of the others, shows the manner of extension through the lymph channels and the small size of some of the cell groups, whilst the normal condition of the connective tissue and corpuscles shows that the latter have taken no part in the production of the pathological epithelium.

From a consideration of the above described methods of growth and extension in malignant epitheliomatous tumors we learn that in any given case, even in the very early stages, there is no capsule enclosing all the pathological epithelium, and no well marked limit to the infiltration ; but that the periphery—the limit of infiltration—is an uncertain, an irregularly defined one, and always extends much beyond the makroscopic one, except in the possible case of the disease of the mammary gland being recognized before the basement membrane of an acinus has been broken through.

In secondary tumors the results of microscopical examinations, as well as a study of the characters and

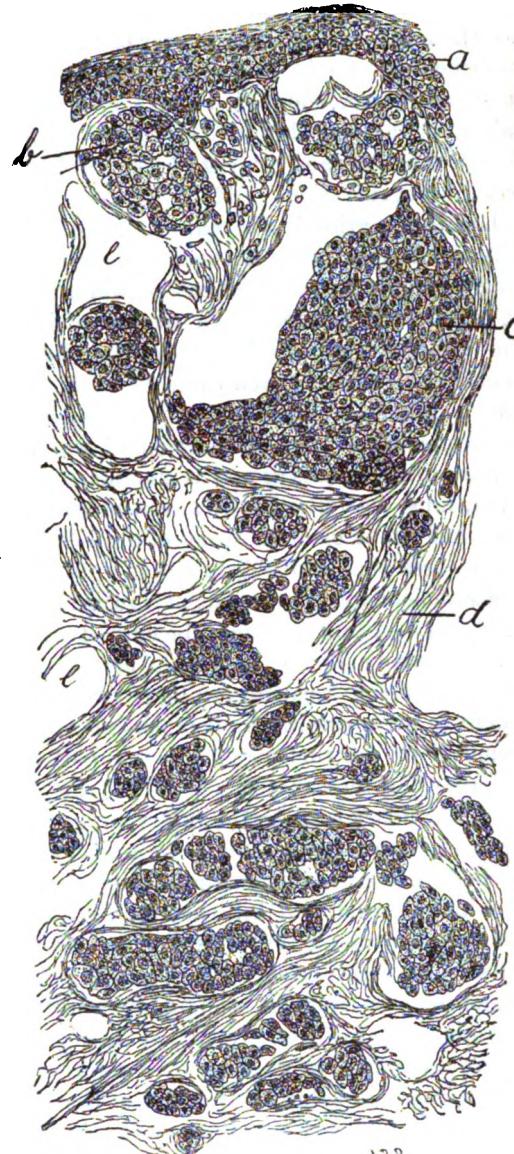


Fig. 8.—Section of a secondary nodule of the skin in a case of cancer en cuirasse. *a*, normal rete; *b*, cancer cells in a papilla; *c*, group of cancer cells from which some have fallen out in preparing section; *d*, corium; *e*, space from which cells have fallen out.

tendencies of the epithelium, as regards form, arrangement, and chemical changes, make it altogether probable, if not certain, that the epithelium of the secondary tumor has its origin from the epithelium of the primary tumor by a direct travelling through the lymph channels of solid bodies, the products of the epithelial proliferation at the primary seat, these bodies and their progeny naturally having the ability to continuously multiply, and thus form the mass composing the epithelium of the secondary tumor; the liver epithelium, for instance, does not seem ever to assist in the formation of the tumor epithelium, but to undergo only a degeneration, a circumstance

which seems to argue against the parasitic theory; for, as there can be a primary cancer of the liver, the liver epithelium should be favorable ground for an organism and hence, should it be invaded by a cancer organism, would probably take an active part in the pathological process and undergo active proliferation, instead of degeneration. If it be true that the secondary tumor arises in the manner above described, then in the tissues lying between the primary and secondary tumors pathological epithelium must exist. Thus, in mammary cancer with secondary infection of the lymphatic glands in the axilla, the lymph channels in the area between these two tumors must contain a greater or less number of cancer epithelia, the non-removal or non-destruction of which, even when the axillary glands as well as mammary gland are removed, must be followed by a continuation of the disease, and it is evident from clinical history of operated cases that probably a single epithelial cell may be sufficient for the nucleus of a recurrence.

Treatment.—Admitting then the correctness of the view stated above as to the origin of the primary tumor and of the secondary tumor, the object of treatment in every case where it is possible, should be the removal or destruction of all the pathological epithelium wherever situated, whether at the primary seat, the secondary seat, or the intervening area.

If cancer is a parasitic disease, we may hope some day to find an agent—a drug administered or applied in some manner that will kill the organism, or make the ground unfavorable for its existence. At present the question is unsettled, and thus far, empirically or experimentally, no drug has been found to accomplish that result, and for the present, at least, surgical means are the only ones we possess for the removal of the growth; and the comparative value of the different surgical means usually employed will now be considered.

In the simple tissue tumors the new growth when favorably situated can always with certainty be removed by excision.

In cancer, we find, however, that there is no limiting membrane, no definite guide as to the extent of the infiltration beyond the tumor mass, and herein lies the question of the method of operating in different cases.

Starting with the view that the method of removal that gives the best results, is that which removes with the greatest certainty *all* of the morbid epithelial tissue is the preferable one, even if the resulting deformity or pain connected with the operation be greater than by other methods, and that of two methods of operation promising equal results, that causing least deformity and least pain should be employed, we will now discuss these methods.

The means usually employed are operations by cutting instruments, electricity, curetting, curetting and caustics combined, and caustics alone.

We will first consider the use of the knife, the cutting method, in a primary epithelioma. From a study of the mode of origin, the method of extension, and cause of recurrence, it is clear that if the surgeon makes his incision beyond the limit of epithelial infiltration there can be no recurrence of the disease. I use the term recurrence here in the usual sense of that word, but in reality a recurrence only happens when the second tumor formed does not depend upon epithelium from the seat of the first tumor. All other cases are examples not of recurrence but of a failure at the time of operation in removing all the cancer epithelium, and, consequently, after a variable period, depending partly upon the amount of this cancer epithelium not removed or destroyed, and partly upon the nutritive conditions, a mass makroscopically recognizable is observed. An epithelioma of the lip may recur after complete removal of a previous epithelioma of the same part, but in mammary cancer, if the gland has been removed by operation, there is no gland epithelium left from which a true recurrence could occur.

Admitting then that if all the pathological epithelium is removed there can be no so-called recurrence, we have to consider under what conditions is the cutting operation the best method for its removal. In the case of mammary cancer it must be admitted that one can with the knife remove at a single operation, and without pain or special danger, a mass of tissue which could not be removed by other methods without causing much suffering, lasting for a considerable period. If the growth is a recent one and the operation is performed with due regard to the possible extent of the infiltration, an excellent result is to be expected. I have in mind several cases in my practice and in that of others, in which, after several years, there has been no sign of a recurrence. I have, however, also seen a considerable number of cases of not very advanced cancer where, from want of belief, probably, in the likelihood of distant slight infiltration, the parts appearing makroscopically healthy, a recurrence has taken place either from the base or along the scar margin within a few months time. About a month ago I applied a caustic paste to such a case, one that had been operated upon last October with recurrence along the line of incision. If the condition represented in Fig. 1 were borne in mind, and, furthermore, that there is great tendency in these cases of mammary cancer for the infiltration to pass into the pectoral fascia and between the muscle bundles, and also towards the cutaneous surface in the area of the nipple, and the operator would

cut wide of the nipple, as wide as consistent with the bringing together of the flaps, and also remove as much can be safely done of the deep parts, as well as of the fat tissue outside the gland, the tissue forming the mamma as a whole, irrespective of the size of the cancer, I am certain that recurrences would be much rarer than they are at present. As already stated, recurrences always show that some of the pathological epithelium has been left behind, and from the number of these recurrences in even rather recent cases I am inclined to think that some of them are the result of not removing all the tissue which could have been removed consistent with the life of the patient, irrespective of the resulting deformity or slow healing. In more advanced cases, where the axillary glands are affected, the same principles hold true, the gland should not simply be "shelled out," but periglandular tissue also should be removed or cauterized, and, from what has been previously stated, as much tissue as possible should be removed in the area through which run the lymph channels between the primary and secondary tumors; for not to remove that, could have but one result—a recurrence of the growth. Whether after the operation the parts should be treated antiseptically in order to obtain, if possible, healing by first intention or not, will be touched upon later, when we have discussed the action of caustics. What can be accomplished by other means in mammary cancer will also be discussed later.

There are some parts of the body subject to cancer where the knife seems, in my experience, to offer the greatest hope of cure. Upon the flexor surface of the forearm, near the wrist, an epithelioma sometimes develops, and is probably indirectly caused by the irritation from a shirt sleeve button. Unless seen very early these cases, in my experience, are difficult to handle with caustics, and, as a rule, amputation of the arm above the elbow is probably the best method of treatment. A local excision would not, I think, compare in value with caustics any better than in epithelioma of any cutaneous surface and this will be weighed directly.

What is true of epithelioma of the forearm is also true of cancer of the penis and requires no further discussion. If small and favorably situated it can be removed by caustics or excision, if advanced, amputation is the only resource.

In epithelioma of the scrotum, a part from which it is usually possible to remove a large amount of tissue without injury to the patient, the knife will be the best agent in the majority of cases.

On those parts of the skin where the general surface is flat, as on the forehead, prominent part of cheek, lips, back or front of neck—at situations where the collar button irritates the part, etc., it is

not difficult to remove a considerable area of skin without producing deformity, but on some other parts, as when the cancer is situated upon the nose, and especially upon the alæ, a frequent situation, it is not possible to remove, as a rule, the necessary amount of tissue without causing more or less mutilation, and if the disease can be removed equally well by other means which do not cause noticeable deformity, the knife should not be used. I will endeavor directly, to show that other means are much to be preferred under these conditions, as well as in epithelioma in general of the cutaneous surface, with the exceptions already referred to.

Having decided to operate with the knife upon a given cancer in a favorable situation, such as one upon the forehead, an epithelioma for instance of slow growth and makroscopically sharply limited, the usual procedure is to cut some distance beyond the makroscopical margin, and having removed a certain amount of tissue bring the edges of the wound together and treat the part upon antiseptic principles. If the surgeon has removed *all* of the tumor, such a course must be a correct one, but practically, it is a fact that very frequently there is a recurrence of the disease after a few months or possibly a year, or even two years.

I have already referred to a case of epithelioma of the gluteal region, a case operated upon by a surgeon of experience and ability, and in this case, with the special object of showing me that he would remove enough, the incision was unusually distant from the elevated margin, yet there was a recurrence of the disease within a few months. If a few scattering epithelia happen to be situated beyond the line of incision, what is the result when the wound is treated antiseptically? The part heals by first intention; there is no agent at work to injure the tissues, every cell, whether normal or pathological in the tissues, is uninjured and only a formative process occurs. If a single cancer cell is left, even at the margin of the wound, it is not destroyed, and during the formative process, a period during which a good supply of nutrition is brought to the part, this epithelial cell is placed in a specially favorable position for proliferation. If the part were not treated antiseptically and suppuration followed and the cancer cells were situated near the margin, the inflammatory process would probably destroy the pathological elements, and thus a result would be obtained equal to that obtained by a more extensive incision, whilst the wound would subsequently close by granulation tissue formation, leaving an insignificant scar; or what I prefer in such cases of removal by the knife, is, immediately after cutting to touch the base and margin with caustic potash, for instance, and then

bring the parts together and encourage the healing process by whatever means are advisable. If the wound be not treated antiseptically and pathological epithelia exist some little distance from the margin, a slight inflammatory process preceding healing would probably not destroy them, and the part in which they reside would soon be in the condition known as condition of reaction after injury and the cells would, consequently, proliferate with increased rapidity. I have, however, occasionally seen a small superficial epithelioma destroyed by a mild inflammatory process alone. Unless, then, all of the pathological tissue be removed, the part in such cases should not be treated antiseptically, otherwise a recurrence is certain; but if the wound be cauterized with caustic potash, or chloride of zinc, or other strong caustic, so as to produce an intense inflammation without causing necrosis *en masse*, all cancer cells within a considerable distance of the cut surface will be destroyed, and a recurrence less likely to occur, and also in this manner, as much pathological tissue would be removed as by a more extensive incision. There are other points in this connection which will be discussed when considering the use of caustics.

It would seem, then, that the advantages of excision, as regards extent of surface and depth of tumor in not very advanced cases, are, no pain, quick removal of the tumor, and rapid healing of the wound; but to accomplish as much as can be done by caustics or by knife and caustics combined, more tissue must be removed than when these means are employed.

If the tumor is situated upon an ala of the nose, and the growth be thoroughly removed by excision, the consequent deformity, in my opinion, is a serious objection to the operation, and it should not be resorted to when much superior methods can be employed.

The use of electricity, except as a caustic, has not been shown to be a reliable agent, although it is possible that new methods of employment may give better results than those already obtained. I have seen tumors diminish in size under the use of electricity, but never a complete removal. With a galvano-cautery or a thermo-cautery, the tissues can be destroyed as well as with caustics, and without pain, if cocaine be first injected into the tissues. There are certain parts of the body where the method is sometimes advisable, as when the tumor is situated in the roof of the mouth, or close to the inner or outer canthus of the eye. It is not suitable, I think, for large or deeply seated tumors, and as it destroys equally normal and pathological tissues it is followed by more scarring than after the use of certain caustics. If it is used, the tumor mass should be thoroughly destroyed, and if that be not done at a single opera-

tion, the second operation should not be delayed many days, lest the part get into the condition of reaction after injury.

Scraping or curetting is often employed and has many advocates, but I think a little consideration of the subject will suffice to show that the method should not be employed unless in very small and superficially seated tumors, and, even then, other methods, I believe, are more certain in their results. The operator, as a rule, scrapes away a less quantity of tissue than is removed by the knife, and, consequently, if the infiltration extends into the tissues in the manner I have endeavored to show in this paper, a considerable amount of epithelium must remain behind in the part. The pain is greater than in incision, and it also requires to be performed a number of times at intervals. The serious objection to this method in my mind, is that all of the pathological tissue cannot be removed in this way at a single sitting, and that in the intervals between the scraping operations, the part is in a condition of reaction after injury, there is more blood brought to the part, and the cancer cells will grow with much greater rapidity than if the part had not been operated upon, and as the lymph vessels become dilated there is a danger of rapid extension of the disease. Some writers maintain that the operator can recognize when he reaches healthy tissue, but such has not been my experience, and a consideration of the microscopical character of the manner of spreading the tumor makes it difficult to understand how that is possible to do so. Practically, I have had unsatisfactory results, and from cases which have occasionally come under my care, I am satisfied that other operators do not always fare better than I have done with the method.

Prof. Vidal, of Paris, treats superficial epithelioma by scraping away all the soft tissue, and ceasing when considerable resistance to the instrument is encountered, the wound afterwards being treated night and morning with finely powdered chlorate of potash. If any of the morbid tissue is left the operation is to be repeated. This method, I feel certain, should not be employed in any but very superficial tumors.

Some advocate scraping and subsequent cauterization, but it would be better, I think, to excise what is usually scraped and then cauterize in the manner mentioned when discussing the use of the knife. Scraping and then cauterizing with nitrate of silver and other mild caustics should not be employed for reasons to be given later in the article.

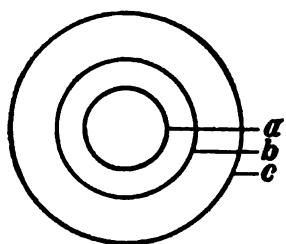
Caustics of various kinds have been used for many years for the removal of cancer both by the regular profession and by charlatans. Perhaps their employment by the latter has interfered with the credit they deserve at the hands of the former, and it will

be my endeavor here to show that the use of certain caustic agents, judiciously and properly applied, is of the greatest service in the treatment of cutaneous cancers, and, in the majority of cases, far superior to the knife in securing their permanent removal with the least amount of deformity. The cynic who sneers at the use of caustics in any and every case, either has had no experience in their use, or his method of application has not been guided by any clear conception of the subject discussed in the first part of this paper. That charlatans use caustics does not prove they have no value, in fact many physicians throughout this country have informed me that of their own knowledge these charlatans have cured many cases of mammary and cutaneous cancers, without the use of the knife. If the members of the regular medical profession will carefully consider the views I am endeavoring to elucidate in this paper, and act accordingly, I am satisfied that examples of innumerable cases of cancer which now remain untreated until it is too late for any operative method to be of much advantage, will be permanently removed, and thereby many lives saved from a slow and painful death; for it must be admitted that epithelioma, in its early stages too often does not receive proper care from the general physician.

From what I have already written, it is clear that no caustic should be used that does not rapidly and effectually destroy, either directly or indirectly, the epitheliomatous tissue. The caustic agents which have been employed in this disease, are, particularly, nitrate of silver, nitric, sulphuric and hydrochloric acids, acid nitrate of mercury, carbolic, and acetic acids, ethylate of sodium, arsenious acid, chloride of zinc, and caustic potash.

With these caustic agents tissue can be destroyed to a greater or less extent with a greater or less degree of rapidity! Some of them, as nitrate of silver, carbolic acid, etc., act very slowly, and to a slight degree, whilst others, like caustic potash, penetrate the tissues quickly and cause rapid necrosis.

The objections to some and the advantages of other of these caustics, will be best illustrated by the use of the accompanying diagram.



that enclosed within the circle *a*. Outside this area and extending as far as *b*, microscopical examination will show that there is more or less circulatory disturbance and epitheliomatous tissue as an extending infiltration. The area lying between *b* and *c* may or may not contain cancer cells, and may show slight or no circulatory disturbance, whilst outside of *c* we will suppose that the tissue is perfectly normal. Now, if the tumor were to be removed with the knife, the operator rarely thinks of cutting beyond the circle *b*, and if the part is treated antiseptically, and there are cancer cells beyond that area, there will be a recurrence of the disease. If the incision is carried to *c*, there can be no recurrence if the incision has been carried deep enough. The resulting deformity will vary according to the extent of the incision and the location of the tumor.

If one of the weak caustics is employed, nitrate of silver for instance, what is the effect upon the part? Only a portion of the tumor mass can be destroyed at one sitting, as the agent does not penetrate deeply, neither does it injure the tissue to any extent beyond the portion necrosed; there will be some inflammation, which gradually loses itself in the surrounding skin, and after a few days disappears. Taking the drawing for illustration, the nitrate of silver destroys only a portion of the tumor lying within *a*. The rest of it, and some of that lying within *b*, will undergo slightly increased inflammatory changes, whilst a part within *b* and all within *c* will probably be unaffected. As the tissue of the tumor area soon recovers from the injury, the portion of the tissue outside of the necrosed area is then in the state known as condition of reaction after injury, there is more blood and nutriment brought to the part, the lymph channels are enlarged, and every condition is favorable for a more rapid proliferation and infiltration of the epithelial cells than existed before the cauterization. Even if the part were cauterized every day, which could scarcely be done, the tissues between *b* and *c* would not be injured to any degree and there would be great danger of producing the condition favorable for the spread of the disease. If the above statements are correct, and practically, as well as theoretically, I have found them to be so, then the use of mild caustics leaves the patient in a worse condition than if the disease had not been interfered with. I have observed the bad effect of these cauterizations most frequently in cases of cancer of the lip, usually on account of error in diagnosis, but the same result would of necessity follow wherever the disease be situated. How many cases of cancer of the cervix uteri must have been aggravated by the use of that omnipresent stick of silver nitrate? What holds true of nitrate of silver, holds true of all

Suppose we have to deal with an epithelioma of the skin, occupying, makroscopically, as large an area as

other mild caustics—they do not destroy with sufficient rapidity, and consequently they indirectly favor the process of proliferation and infiltration.

The mineral acids can be employed if the epithelioma is very small and superficially situated, but should not be used if the tumor is deeper seated, as other agents act with more certainty. I have never used the acid nitrate of mercury and think it only suitable for the same kind of cases as nitric acid.

The three agents with which I have had the most experience and which have given me the best results, are caustic potash, chloride of zinc, and arsenious acid.

Caustic potash quickly liquefies tissue, and with this agent one can at a single sitting destroy a large amount of tissue, and produce the following changes in the surrounding part. Suppose the cancer is as large as the area within the circle *a* of Fig. 9, with a stick of caustic potash, all of this tissue can be destroyed, necrosed or liquified in a few minutes, at a single sitting. The action of the caustic, however, extends further than the part directly necrosed, and its use is followed by marked inflammatory changes in the surrounding parts, all of the tissue lying within *b*, will undergo an intense inflammatory process which may or may not lead to destruction of the tissue. If it is destroyed from the intensity of the inflammatory process, then there is a wound as large as that made by the knife. In that case the tissue outside of *b* and within *c* will be also much inflamed, and the inflammatory process will probably extend still further into the surrounding tissues. As there are probably epithelial cells in the area lying between *b* and *c*, they will be subjected to the inflammatory process, and as pathological tissue succumbs to this process more readily than normal tissue, these cells are likely to be destroyed by an inflammation of such an intensity as would still leave the tissue within which they reside in a condition of ability for restoration to a normal state. The degree of intensity of inflammation must, however, be considerable to destroy the morbid tissue. As the degree of inflammation will depend upon the vulnerability of the tissue, and the vulnerability upon the condition of nutrition, this condition depending upon the extent of the infiltration by the epithelial cells, and, as we have already noted that a circulatory disturbance is always present in cases where the epithelium has already penetrated the connective tissue, so the amount of inflammation following the use of the caustic is a valuable guide as to the extent and amount of the epithelial infiltration. If the tissue between *a* and *b* subsequently breaks down completely, it is because the infiltration was considerable in that part, and the tissue, consequently, was very vulnerable, and if the inflammation is rather intense between *b*

and *c*, it is probable that epithelial cells were present and had interfered somewhat with the nutrition of the part. Supposing such to be the result of the caustic and that all the tissues within *b* has been destroyed, the inflammatory process will destroy all the pathological epithelium within *c* and probably beyond that line; that is, you accomplish with the potash a result equal to that to be obtained by the knife when the incision extends beyond *c*, at the same time the wound produced extends only to *b*.

If the part within *b* is not destroyed but is much inflamed, the epithelium will be destroyed within that area, and even beyond, if any should exist, and in that case the caustic produces a small wound and gives better results than a more extensive removal of tissue with the knife would do.

From these considerations I would maintain that in epitheliomatous tumors, during the earlier stages, and even when they are of considerable size, the use of caustic potash will give much better results as regards complete removal of the disease than can be obtained with the knife, provided the same area of tissue is destroyed or removed in both operations. But there is another point upon which I am pretty well satisfied, and that is, that from the use of the caustic potash, and some of the other caustics, there is formed in the tissues cauterized a tox-albumen which is destructive to the cancer cells, or organisms, if such exist. Perhaps it is the inflammatory process alone that gives such good results in the primary tumor, but when one sees enlarged lymph glands at a distance from the primary tumor diminish in size after the cauterization, as I have often seen, it is difficult to avoid the view that such an agent must be acting. Some of these glands may have only undergone simple inflammatory enlargement, but others, I am satisfied were cancerous. If this is true it may give a clue to future successful experiments, especially if the parasitic theory be the correct one. I would advise the use of caustic potash in all cases of small tumors situated upon the forehead, cheeks, lips, and some other parts of the body, but would not use it near the eye nor upon the alae of the nose, nor when the tumor is near an important blood vessel. In early epithelioma of the lip it is a valuable agent. I remember about ten years ago a patient from Canada came under treatment for a superficial, but extensive epithelioma of the lower lip. The tumor was one inch in length and had existed several months. Other members of the family and several relatives had suffered from cancer, gland or cutaneous. This patient remained in New York only one week, during which time I cauterized the lip twice with the stick of caustic potash. As I was afterward informed, a thick scab was produced, which, after several days fell off,

leaving a raw dirty-looking sore, which was dressed with a simple ointment and soon healed. I saw this patient last year and close examination failed to show a trace of epithelioma, or of scar tissue, or of any deformity. He gave up smoking a pipe at the time he was treated, but has resumed the habit the last three or four years. I have treated other cases where the tumor was deeper with equally good results, except, that as a rule, some cicatricial tissue formation, a scar remains to show the former seat of the disease. For small tumors, when you wish a positive result, with one sitting, the potash is probably the best agent to use. It is especially indicated in cases of papillomatous epitheliomata. The objection to the caustic potash, is, that it destroys normal tissue almost as easily as pathological, and consequently should not be used where it is important to save tissue, if we have an agent that will be more elective in its action. Its use is attended with much pain, but the patient could be anæsthetized or local injection of cocaine employed if necessary, so that is no disadvantage as compared with the knife.

Chloride of zinc can be used either in stick form, or in solution, or in a paste. It does not destroy tissue so rapidly as caustic potash, and it causes much more pain, which also lasts for a much longer period. It destroys both normal and pathological tissue, although I do not think with an equal degree of rapidity, and is a most valuable agent in the treatment of epithelioma. In all the cases mentioned as suitable for the use of the potash the zinc can also be employed, and, in the stick form, on account of its slower deliquescence, and the ability to use it as a pointed pencil or arrow, it is much to be preferred to the former for some cases. In the form of arrows Maisonneuve used it in the treatment of mammary carcinoma, a path being made first with a bistoury and the arrow then inserted to the base of the tumor. As many arrows as seemed necessary to destroy the tumor were inserted at a certain distance from each other. Whilst I would not treat a primary cancer of the mammary gland in this way unless the patient absolutely refused removal with the knife, yet there are no reasons why the method should not be successful, and in recurrences, the use of the stick form enables one to destroy, with considerable precision, deeply seated masses of morbid tissue. In epithelioma of the roof of the mouth and in that of the lip, the stick can be used with good results. In those cancers of the lip with a tendency to the nodular form of tumor, the stick can be pushed to the base, and the part cauterized to any desired extent, or a piece of the zinc can be imbedded at the base and allowed to dissolve, the size of the piece depending upon the amount of necrosis desired. The stick is also used to cauterize the base of cutane-

ous epitheliomata removed by the knife, or curette, and the wound left after removal of the mammary gland by excision. When the epithelioma is situated near the outer or inner canthus of the eye, or even when the lid is attacked, a pointed stick can be used very effectively, and with safety. In such a case caustic potash, or a caustic in solution, or in paste form, is liable to cause too much inflammation of the eye and is not enough under the control of the operator. A solution of chloride of zinc, 50 per cent., with or without cocaine, can be used for touching the wound, after other operations, or injected with any desired portion of a tumor. The cases suitable for its employment easily suggest themselves to the physician and further reference at this time is not necessary.

A chloride of zinc paste is one of the best means we possess in the treatment of cutaneous epithelioma, and has also been strongly recommended for mammary cancer. The formula usually employed is that known as Bougard's paste, and is as follows:

B	Farine tritici (wheat flour)	
	Amyli	aa $\frac{3}{4}$ i
	Acid. arsenios. pulv.	grs. viij
	Hydrarg. sulph. rub.	Dii
	Ammon. mur.	Dii
	Hydrarg. bichlor. corros.	grs. iv
	Zinci chlorid. cryst.	$\frac{3}{4}$ i
	Aqua fervid.	3 iss

The first six substances are finely ground and then mixed in a glass mortar. The chloride of zinc is dissolved in the boiling water and this solution slowly added to the powder, the contents of the mortar being kept rapidly moving with the pestle, until all the solution is added; then let it stand for about 24 hours and the paste is ready for use. The paste is spread thickly on a piece of muslin and left upon the part about 24 hours. If the application has been successful all of the makroscopical cancer mass should appear to be necrosed completely, and the tissue beyond inflamed in the manner already described as occurring after the use of caustic potash. As the paste does not act so quickly as the potash; in other words, as the tissue is able to resist its injurious action for a much longer period than is the case with the other agent; and as pathological tissue succumbs easier than normal tissue, it is possible to remove an epithelioma by means of the paste with less deformity—by the production of a smaller open sore, than with the caustic potash. It is therefore, the more preferable agent if the epithelioma already occupies a considerable area. If the tumor is a small one, say the size of a pea or slightly larger, the resulting scar in either case is insignificant and both agents would give satisfactory results. By the slower forming inflammation from the zinc paste, the degree of inflammation can

be better regulated than with potash, and epitheliomatous infiltration, if any exists, can be destroyed for a considerable distance beyond the area completely necrosed, without destroying beyond restitution the original tissue of the part. If the first application is not positively successful, a second application should be made within a few days, before the part has time to take on a formative process, for reasons already given. A large surface can be treated at a single sitting with this paste, as there is no danger of poisoning; but as it produces very great pain, the patient's feelings must sometimes be taken into consideration. If the affected area is already large, it is advisable to destroy first that part encroaching on important organs, and subsequently apply the paste to the remaining part. This paste can be used in all the forms of cutaneous epithelioma and in all stages; but the stick of zinc is preferable for some locations, as already stated. The only objections to the paste are, the great pain it causes, more in my experience than caustic potash, and much more than an arsenious acid paste, but the experience of some observers on this point do not agree with mine; and also that it is not as elective in its action as arsenious acid or pyrogallic acid. The pain, perhaps, can be modified by adding cocaine to the mixture, or injecting this into the tissues, and, when possible, localizing its action for the 24 hours during which the caustic is attacking the tissues. It is a good application for the papillomatous form of epithelioma, but in the distinctly epithelial form—a flat epithelioma for instance—I have found an arsenious acid paste more satisfactory. If the epidermis over the tumor has not broken down, it is better to liquify it with caustic potash before applying the paste. If the physician is satisfied that sufficient tissue has been destroyed by the paste, the resulting sore may be treated by a simple indifferent protective salve, or by an antiseptic dressing. If the loss of tissue is considerable, it is better, I think, to have the sore heal slowly, so as to have considerable granulation tissue formed, in order that the resulting deformity be as slight as possible. A little exuberant granulation tissue formation, with its subsequent normal contraction, gives the best result. There can be no question among those who have treated many cases of cutaneous epithelioma that the use of Bougard's paste is a decided advance over the use of the knife, with the few exceptions, as regards locality, mentioned when discussing the cutting operation. The resulting scar in small tumors, is unappreciable, and even when a large area is affected the deformity after cure is not great. The great advantage, however, is, that if well treated the disease is not liable to return.

In the use of arsenious acid in the form of a paste, Marsden's paste, we have an agent that in a certain class of cases has given me the best results I have obtained, and in the last eighteen years I have had considerable experience and have paid particular attention to every case, as I have been deeply interested in the subject. Marsden's paste consists of equal parts, by weight, of arsenious acid and powdered acacia, rubbed well together, and enough water is added to make a paste about the consistence of butter. The paste must be freshly made each time it is used. It is spread upon muslin or rubber plaster in a layer about one-quarter of an inch thick, and firmly applied to the part. Marsden advises that it be not applied at one time, to a larger area than one square inch; but I have applied it to very much larger surfaces and have never seen any injurious effects. It is not suitable for cancer of the lip, or of mucous membranes, on account of the danger of poisoning by absorption. A study of its action on a tumor of small size, will give an idea of the result obtained when the treatment is properly conducted.

Let us suppose a tumor the size of the area enclosed within the circle *a* in Fig. 9. If the epidermis is unbroken, it should be partly destroyed with caustic potash, to get the prompt action of the application. The paste is spread upon rubber plaster and fixed to the part. It should always, when possible, cover a surface extending half an inch beyond the elevated margin of the tumor, and left on from 14 to 20 hours. Within 20 hours there is no danger of the acid destroying the surrounding normal skin. Whether it be left on 14 or 20 hours in a given case, depends upon the situation and the amount of pain, which latter is to some extent a guide as to the intensity of action of the agent. If the pain is not great and the part not much swollen, it should be left on 20 hours, but as a rule 16 to 18 hours is the proper time to advise the patient to keep it applied. If the action has been satisfactory the probabilities are, that all of the tissue within *a* and some, if not all, within the circle *b*, will appear necrosed *en masse*, whilst beyond that region will appear an inflammatory process of great intensity next the necrosed dead tissue, and, extending, with diminishing intensity, a considerable distance in the surrounding tissue; for instance, if the tumor is situated upon the lower part of the nose or some part of the cheek, the eyes are frequently closed by the inflammatory oedema present. The fact that the paste can be applied to the healthy skin for the same length of time without producing such destructive results, shows that it is, perhaps, what is called elective in its action. My own view is that it is a question of vulnerability of tissue as well as elective action,

and as in the area between *a* and *b* the tissue is injured by the epithelial infiltration, it is destroyed if the paste is applied long enough. As all the area within *a* is epitheliomatous, that part breaks down first, and is soon followed by breaking down of the tissue between *a* and *b*, provided the part is much changed by an infiltration of epithelium. The part beyond *b* would break down more slowly than the more central tissue, as the further from the centre the less vulnerable is the tissue. As the pathological tissue is injured sooner than normal tissue, the inflammatory process, if of considerable intensity, would destroy the epithelial cells lying within the circle *c* and even beyond that line.

If the action of the arsenic is elective in character, that is, that the caustic has a preference for the epitheliomatous tissue apart from its simple pathological character, then it is easily understood how the paste would destroy the outlying epithelioma, whilst the original tissue would be scarcely injured by the inflammatory process. That this elective action does exist is shown, I think, by the difference in effect between the chloride of zinc and the arsenious acid paste. The effect of the chloride of zinc paste in 24 hours is the same as that of the arsenious acid paste in 16 to 18 hours; but the injury to the normal tissue is greater with the former than with the latter, consequently, the Marsden's paste has a tendency to destroy the pathological tissue in a special manner in addition to the action of a non-elective injurious agent, which destroys pathological tissue sooner than normal, provided the action requires to be exerted for a period of time to produce destruction of tissue.

Admitting that the arsenious acid has an elective action as well as one whose intensity is regulated according to the vulnerability of the tissue, and that such action would make it of special value as a destructive agent in this disease, we will now consider further the effects usually observed after its application. Referring again to Fig. 9, it is found that all the tissue within the circle *b* is necrosed, showing that the infiltration extended much beyond the makroscopic limit which was at the line *a*. This leaves a wound as large as would have been made by the knife; but beyond that broken down area, the tissue is acutely inflamed, much more than normal tissue would be after such an application, showing that probably the infiltration was to a greater or less degree present beyond the line at *b*, that is, beyond the line of what would probably be regarded as a safe line for incision with the knife. Just as when discussing the use of caustic potash, we see that by the inflammatory process, this infiltrated epithelium would likely be destroyed, whilst the original tissue of the part returns

later to a normal condition. This is the advantage over the knife, a much wider range of beneficial action from the removal or destruction of a given amount of tissue.

If the part is examined when the paste is removed, and the tissue decidedly necrosed as far as *b*, or even only to *a*, with marked inflammation for a distance beyond, then the part should be treated as a simple wound and carefully watched. If it does not present these characters, a second application should be made at once, or a third, if necessary, and so on. The object is to obtain prompt and sufficient action. If the wound heals within a fair length of time, say within two or three weeks, and equally from all parts of the margin, no further applications should be made; but if it refuses to heal at any one part, the paste should be reapplied to that portion; for in that case it is certain that some of the tumor still exists at that place. If the wound heals quickly and from all parts, the patient should be kept under observation for at least one year, lest a recurrence take place, as the presence of a few isolated cancer cells would not interfere with the process of repair, as is exemplified by healing by first intention after excision when the part is treated antiseptically, although a subsequent recurrence shows that all of the tumor has not been removed. If it returns, the same treatment must be again employed; but I do not think recurrences are frequent, if the paste has acted to the desired extent, as judged by objective symptoms.

The arsenious acid paste is to be preferred in all cases where it is desirable to save as much tissue as possible. Upon the nose, for instance, I have frequently removed an epithelioma the size of a finger nail, without causing any appreciable loss of the normal tissue. From its action so far beyond the area of complete necrosis, parts can be treated that are sometimes scarcely accessible to the knife, and on this account the final results of the treatment as regards recurrences compare most favorably with the operation by excision.

If the tumor is seated just below the eye, the lachrymal secretion may interfere with the paste—wash it away, and in that case it may be necessary to reapply a new paste several times during the 14 to 20 hours. If situated near the lid, the dropping of a four per cent. cocaine solution into the eye at intervals tends to reduce the pain to a quite bearable amount.

For the successful use of these three caustics, potash, zinc, and arsenic, several things are necessary. The physician must be able to recognize the form of tumor, he must appreciate the manner of extension of the growth and the necessity for prompt and

complete removal or destruction of all of the pathological epithelium. Combined with these, some cases demand considerable experience for their successful handling if important organs, or even the patient's life is to be saved. A fault which is quite frequent with physicians is the neglect to treat the case energetically until they are thoroughly satisfied that enough tissue has been destroyed. The desire not to give the patient too much pain is usually the cause of their imperfect treatment; but after having treated a few cases unsuccessfully that error is likely to be corrected. If this paper will help to correct it with the first case it will not have been written in vain, for many deaths which have resulted from cancer, could have been prevented by active and proper treatment in an early stage.

Other agents have been used with much success in epithelioma, but the article is already too long to allow me to enter into a description of their uses. Pyrogallic acid $\frac{3}{4}$ i to $\frac{3}{4}$ i of vaseline applied continuously for two to seven days, acts somewhat like arsenic, in an elective manner, and causes little, if any, pain. It is a suitable application for extensive peri-epitheliomatous lesions after curetting. Resorcin and salicylic acid (20 to 40 grains to an ounce of vaseline) sometimes act well, but are unreliable. Pyoktanin and fuchsine injected into the tumor mass or applied to the ulcerated surface have been tried and found wanting as compared with the means I have already discussed. They possess some advantages in extensive and incurable cases, but valuable time should not be wasted with trying them in an early stage. I make this statement from personal experience. In fact, with the three caustics I have specially mentioned, and with the knife in proper cases, a favorable prognosis can usually be given in all cases of cutaneous cancers seen early, and in many cases of recent mammary cancers. I have also cured with caustics, cases declared unsuitable for operation with the knife. I have no doubt but that the future will see a remedy which by injection will remove the disease, but even with the present means at our command, if they are used according to indications, cancer is not always to be regarded as an incurable disease, or one that is certain to recur, and many advanced cases are not so hopeless as supposed by the general profession. Of course, I do not refer to cancer of internal organs, certain of which, for instance, those of the liver, are with our present knowledge invariably fatal.

I regret that want of space will not permit me at present to enter still more fully into the many interesting questions connected with the subject.

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ON ENDOSCOPY OF THE MALE URETHRA.

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Inspection is by far the most important of our means of diagnosis of disease. With its help we have certainty, accuracy and definiteness. Without it we are often relegated to surmise, probability and imagination. Eyesight knowledge equals in value that obtained by all the other senses together; and no pain is too great in the effort to extend its sphere. We endeavor to look around corners into narrow passages, through solid tissues, and the triumphs of the ophthalmoscope and the laryngoscope are incentive and justification for our efforts.

The male urethra has long resisted the attempts of exploring eyesight. The length and smallness of the canal, and the apparent impossibility of obtaining an efficient illumination and an adequate field of view, had brought urethral endoscopy into disrepute, until an authority like Van Buren accepted Thompson's dictum as final: "If a man has a good and tolerably practiced hand, with a fair share of intelligence, I do not think he will gain a great deal by the endoscope; and if he has not, I think it will be of no use at all."

Nevertheless, there were always those who still believed in the value of a perfected endoscopic method, and from the time of Desormeaux and Cruise in the early sixties, there is a continued series of modifications and attempted improvements in instruments and manipulations. With the application of the electric light came the turning point. Urethral endoscopy became at once practical and useful; at the present moment it is indispensable for the rational treatment of urethral diseases. Truly, light has been brought into dark places; and that opprobrium to the surgeon, that incurable gleet of which Thiry could only say that it must have an end sometime, like all things earthly, will lose its dread repute.

The last few years have seen the production of innumerable modifications of endoscopic instruments: Tubes with external illumination and tubes with an internal light; combinations of lamp and reflector, and tubes in every imaginable variation. It is not my purpose to go into any detailed consideration of these varieties, most of which are open to certain serious objections. I shall only describe the simple and efficient apparatus that I employ myself.

The electric light has made urethral endoscopy a possibility. Ordinary daylight is not strong enough to penetrate into such recesses; direct sunlight is too uncertain, and lamps of gas or oil too cumbersome and too hot. The little incandescent globe gives us

a light at once efficient and strong. Its small size and minimum heat-production enables us to place it almost anywhere we desire with reference to the endoscopic tube.

The electric current is now "on tap" in our large cities, but it is still expensive and troublesome to obtain. Excellent illumination and a constant supply with a minimum of trouble and cost, can be gotten by such an arrangement as is shown diagrammatically in Fig. 1. A-A is the primary battery, composed of

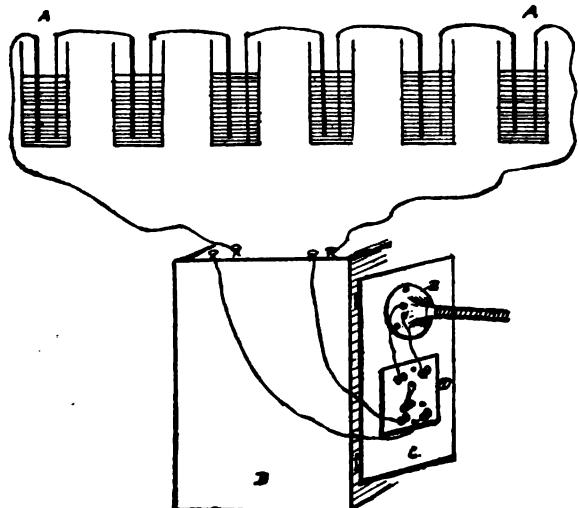


FIG. 1.

A. Primary Battery; B. Storage Battery; C. Lamp Board; D. Switch-Board; E. Lamp Carrier.

six or eight cells; almost any type of the sulphate of copper or gravity or crowfoot cell may be employed. They are connected in series and may be placed in a cupboard, drawer, cellar, or anywhere that is convenient. Ordinary insulated copper wire is then run from the terminals to the posterior binding-posts of the storage battery.

The primary battery is the only part of the apparatus that requires attention. From time to time—say every month in warm and every three months in cold weather—water must be added to the cells to replace that lost by evaporation; and about every six months the chemicals should be renewed. Care must be taken, of course, that the positive pole of the primary battery is connected with the + pole of the storage battery; otherwise you will exhaust your storage battery instead of charging it.

The primary battery may be dispensed with entirely, the storage battery being sent down to the maker to be recharged when empty. This is troublesome, however, and is liable to the serious objection that you do not know that your storage battery is empty until it gives out. It is extremely annoying to have your light go out in the midst of an examination. By the above arrangement, which is permanent, the

storage battery is kept charged fully all the time. Of course, where such facilities exist, the storage can be charged from the Edison current or from a dynamo.

The battery itself I place upon a book-shelf about 4½ feet from the floor, and to its side I attach the lamp-holder, and switchboard. It is not necessary that these parts should be attached together. The storage battery may be placed where the primary battery is, or in any other location, and the switchboard and lamp-holder be fastened to wall or shelf as is most convenient. In my own apparatus the board is hinged to the side of the storage battery, so that when not in use it rests against it and the long lamp-holder lies protected along the shelf; whilst it is simply turned out so that the lamp-holder projects at right angles from the wall when in use.

I prefer to make the endoscopic examination with the patient lying flat upon his back on an examining table; but any of the ordinary chairs or a couch may be used. You get a better control over the patient and instruments when the former lies prone than in the semi-recumbent position. In any case the lamp-board must be so attached to the wall, to a book-case, or to the battery-box, that the lamp itself shall be situated about 15 inches above the centre of the surface upon which the patient lies.

The lamp-board C, carries the small switchboard D, and the lamp-carrier E. These parts must be close together so that the current may be turned on and off conveniently.

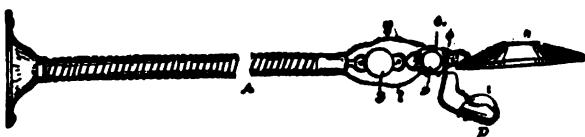


FIG. 2

Fig. 2. Endoscopic Lamp and Reflector, one-seventh actual size.

The lamp carrier consists essentially of a long flexible arm which sustains the light and the reflecting mirror. It is called a "flexible gas arm," and is a patented device which can be obtained from the wholesale gasfitters. It is made of two spiral coils of two metals and possesses the great advantage of flexibility combined with moderate stiffness. I have found, however, that this stiffness is not quite sufficient to hold the mirror and lamp where desired, and so have inserted into the gas arm a piece of stout copper wire running its entire length. This gives the apparatus perfect stability in any desired position. Its range of motion is at least ten inches in any direction when the base is fixed; and this, with the hinged switchboard, gives an amount of lateral and horizontal motion, more than sufficient for all our needs.

The conducting wires run from the storage-battery to the switchboard, and thence into the interior of the gas arm to its extremity. Here a double ball and socket-joint and a large milled-head screw connect it with the piece of hard rubber that supports the mirror and lamp. To this rubber stage are attached the lamp-carrier G, its hood F, the mirror H, and the binding-screw D. The hood is of metal, and surrounds the lamp on all sides save that towards the mirror, thus cutting off all extraneous rays. The mirror is an ordinary three-inch concave reflector, perforated in its centre, and is firmly attached to the anterior extremity of the stage.

The lamp itself is a-half-candle power Edison incandescent, with a filament as thin as can be gotten. A higher candle power is of no advantage. It is so supported as to lie inside the hood, and yet not touch it. I have used such a lamp satisfactorily for a year past without trouble. In case of accident to it a new lamp can readily be soldered, by its wires, to the lamp support.



Fig. 3. Klotz's Endoscope, one-half actual size.

Of endoscopic tubes there exist a variety, simple and bi-valve. These latter I have not found useful, since hyperdistention of the canal is necessary to prevent occlusion of the field of view by projecting longitudinal folds of mucous membrane. The plain nickeled tube, either with the funnel-shaped opening or Klotz's



Fig. 4. Glass Fenestrated Endoscope, one-half actual size.

disc, and furnished with an accurately fitting obturator for purposes of introduction, answers best. A number of long thin applicators, absorbent cotton, and the medicaments to be used, complete the requirements for endoscopic treatment.

The patient being placed in position, the lamp and mirror are swung over and adjusted to the urethral orifice, and about six inches above it, the endoscope is introduced, the obturator withdrawn, and the light turned on at the switch. The observer, sitting or standing, as is most convenient, looks down directly through the orifice of the mirror into the illuminated tube. Mucous or pus shreds are removed with the tampon; and, as the tube is slowly drawn out, the

urethral mucous membrane is inspected, and if necessary, treated as it is brought into view. As large an endoscope as possible should be employed. One of a less diameter than No. 20 of the French scale is quite useless, the tube being so narrow that no satisfactory field of view is obtainable. I habitually use one equivalent to No. 26 French; and when still larger ones can be used, the advantage gained is very great. The meatus must be enlarged in a good many cases; for which purpose a meatotome is preferable to an ordinary knife. After the abundant instillation of a 10 per cent. cocaine solution, the instrument is set to the required size, introduced, closed, opened, and pulled out. Owing to the distensibility of the urethral and peri-urethral tissues, the instrument should be "set" to at least four sizes larger than the one we desire to cut to. This little operation must be preliminary to endoscopy where it is necessary; the bleeding interfering too much for immediate electric examination.

Cocaine should be employed in most cases of endoscopy. Half a drachm of a 10-15 per cent. solution should be injected into the urethra with an ordinary penis syringe with removable rubber tip; the tips being kept in a boric acid solution. By manipulation the solution should be well spread through the urethra. The tubes themselves are best anointed with a 6 per cent. boro-glyceride solution, rather than vaseline.

The tube being introduced with obturator in situ, the first thing to do when a urethral field is exposed, is to clean away any pus, shreds, fluid, etc., which would interfere with the field of view, with the cotton applicators—a considerable number of which should be kept ready wound.

Now it is manifestly necessary to have a definite idea of the appearance of the normal urethral mucous membrane when looked at in this manner. The endoscope reveals a small circular section of the urethra, which closes the endoscopic opening or projects into its lumen. In the centre of this section is the collapsed urethra beyond the tube, which appears as a small dark stellate marking called the "central figure." Around this central figure the mucous membrane bulges inwards towards the tube; whilst at the circumference of the endoscopic circle there is a more or less irregular circle of reflected light. Variations of shape, size and depth of the central figure; prominences, depressions and irregularities of the surrounding prominences; differences in shape and size and brightness of the light reflex; all these give us valuable information as to the existence of mucosal and sub-mucosal changes.

The color of the mucous membrane of the anterior urethra is a moderately deep rose-pink as seen by the electric light; darkening in the post-pendulous portion

to a light carnation hue. Deepening of the color, either through the entire urethra or in special parts, and pallor or bloodlessness of the membrane are readily recognized. Dark red granulations, eroded secreting surfaces, fibrous constringing bands, polypi, tumors, the mouths of dilated and pus-secreting crypts, the openings of false passages—all can be recognized by the experienced observer.

But practice and abundant experience is as necessary here as it is for the user of the ophthalmoscope or the laryngoscope. The first attempts at endoscopic examination cannot possibly be successful. The appreciation of abnormal conditions presupposes an intimate acquaintance with the appearance of the normal tissues. Daily use of the endoscope alone gives the skill to employ it to advantage.

Three points are especially to be noted in endoscopic diagnosis ; they are :

1. *The funnel or conus.*—This varies in shape and in the bulging or flatness of its sides, in accordance with the pressure exerted by the endoscopic tube upon the urethra. It forms a circular swelling bounded by the light-ring reflected from the walls of the endoscope, and having the central figure at or near its middle.

2. *The urethral walls* vary in color in different parts of the urethral canal, from a pale yellow pink in the fossa navicularis to a deep crimson in the prostatic and membranous urethra. The mucous membrane visible in the endoscopic tube is thrown in folds, which run from the circumference to the centre in the normal state. In them can be seen the openings of Morgagni's pouches, the seminal eminence, the openings of the prostatic ducts, etc.

3. *The central figure.*—A dark punctate, stellate, or linear figure, more or less centrally located in the endoscopic field. It is a vertical slit only in the fossa navicularis.

Variations in shape, color, and position of these structures afford us the indications of pathological change.

Endoscopic Diagnosis and Treatment of Urethral Diseases.

A minute subdivision of these maladies, as is made by Grünfeld and others, looks very imposing, and may be theoretically correct ; but it in no way assists the practicing physician. The following are the important pathological conditions occurring in the urethra.

Acute gonorrhœa and *acute urethritis* ; the non-gonococcal form not being distinguishable by the endoscope from the gonococcal form, they are classed together.

Endoscopy is of less value here than in any other urethral disease ; patients do not stand examination

with equanimity in the early stages, and the therapeutic results attainable by means of injections are quite satisfactory. The endoscopic appearances are very characteristic. The field of vision is covered with a thick layer of yellowish-green matter; and this may be the case even if urination and urethral washing has shortly preceded the examination. Removing the pus by means of the cotton-carrier, we find that the funnel is absent. The swollen mucous membrane projects far into the tube ; it is of an angry red, even a bluish-red color. The central figure is shrunk, and may be represented by a mere point ; the stellate lines radiating from it are absent. Erosions of the mucous membrane interfere with the regularity of the circumferential reflex, which is broken and distorted. Bleeding readily occurs, and membranous shreds may be apparent. Endoscopic treatment is not to be recommended.

Granular urethritis. This is the analogue of granular conjunctivitis, and is by far the most important of the conditions that we are called upon to treat. It is the great cause of chronic gonorrhœa and gleet ; being efficient either alone or in conjunction with a stricture or a suppurating pouch. It is the cause of "goutte militaire," filaments in the urine, etc.

In granular urethritis the mucous membrane is moderately red, but not so deeply injected as in the acute form. It is studded with punctate elevations, the granulations, which give to its dull surface the effect of the "pile" of velvet. It bleeds at the slightest touch. There is usually folliculitis along with it. The inflamed openings of Morgagni's glands can be plainly seen, with oftentimes a pus drop exuding from the gland from the pressure of the tube.

It is in granular urethritis that endoscopic therapy gives its most brilliant results. The spots of altered mucous membrane, that no amount of blind groping with sounds and deep urethral syringes can reach, can be seen and treated. Nitrate of silver is the remedy par excellence for these granular patches. Solutions of the drug varying from 1-5 per cent. are to be used, commencing with the weakest, and gradually going to stronger solutions where the granular patches are resistant. The field of vision is first cleaned and dried with cotton on an applicator, and then by means of another applicator, the surface is brushed over with silver. A grayish-white veil at once covers the touched part, which may still be visible the next day. Pain is only momentary. Treatment may take place daily in ordinary cases ; in very sensitive ones at intervals of two or three days.

Rarely do we need to go beyond nitrate of silver in our treatment of this condition. Still, some cases are obstinate, and as in similar affections of other mucous

membranes, a change of therapeutic diet is sometimes attended with the very best results. Pure tincture of iodine may be employed, care being taken to have the smallest efficient quantity possible upon the applicator, so that no excess shall run into the urethra. Iodized glycerine (kali iod., gr. xv, iodine pur., gr. ii, glycerine 3 vi) is perhaps better and safer to handle. Strong solutions of alum and of sulphate of copper may also be employed. I do not like to use the solid copper sulphate crystal in a holder, it being inconvenient and not entirely free from danger.

Under the use of one or other of these applications, the granulations will gradually flatten out and disappear, the velvety surface give way to normal glistening mucous membrane, the liability to haemorrhage get less, and the discharge diminish and disappear.

Erosions and ulcerations occur, though not very commonly, and are the cause of persistent discharges. They appear as a thin gray or yellow coated surface, which cannot be wiped clean. The iodized glycerine mentioned above has an excellent effect on them.

Stricture can, of course, be diagnosed with much certainty by means of the bougie a boule or the urethrometer, and its treatment is fairly satisfactory without the use of eyesight. Through the endoscope we can see the ring constriction through the purplish mucous membrane. The central figure is distorted and potent. But it is especially in collections of new connective tissue which do not assume the regular ring shape, that the endoscope is useful. The white shining strips and placques can be seen running along the urethral axis; the funnel is interfered with and distorted; the central figure is pushed to one side.

Tight strictures, and strictures not passable by the touch alone, have proved pervious to filiform bougies when aided by eyesight. In any case the attempt should be made with the endoscope before giving up the case as impermeable and resorting to more radical measures.

Polypi and cysts. Here the endoscope is indispensable. How great must be the number of chronic urethral discharges that are treated for months and years, secundum artem, and are not cured because they are dependent upon these conditions. The polypus is readily recognized by the endoscope as a swelling which distorts one side of the funnel, and encroaches upon the territory of the central figure. Smaller specimens may be manipulated so as to project entirely into the lumen of the tube. They may then be snared off with an instrument similar to the ordinary nasal snare, but with a longer reach; or they may be removed with the forceps or scissors. Cysts show as tumors projecting up under the unchanged mucous membrane; oftentimes their openings can be found. They must be slit with knife or scissors either

through their openings or through the mucous membrane covering them.

Fistulous openings and false passages may be recognized with the endoscope. They will certainly become less frequent as rational endoscopy comes more into use.

Spermatorrhœa of true variety is rare, but sometimes coincides with catarrhal swelling of the collicus seminalis. This is recognizable through the tube, and should be treated with mild astringents.

Finally, *foreign bodies and urethral calculi and chancres* can be seen and intelligently treated.

Conclusions :

1. Inspection of the urethral canal is absolutely necessary for the rational treatment of urethral diseases. No oculist would treat conjunctival diseases in the dark.

2. The electric endoscope is the sole successful form of the instrument.

3. The endoscope should be employed early in the diagnosis and treatment of obstinate or uncertain urethral maladies; it being a necessity in some and a help in all forms.

4. Chronic urethral discharges can always be cured by an intelligent and persistent use of the instrument.

25 West 53d St.

BASSINT'S METHOD FOR THE RADICAL CURE OF HERNIA APPLIED TO A CASE COMPLICATED BY UNDESCENDED TESTIS.

BY SAMUEL E. MILLIKEN, M.D.

Lecturer on Surgery at the New York Polyclinic and Hospital.

The patient, a machinist, 17 years of age, consulted me, Feb. 18, 1890.

His condition at that time was as follows: On the right side the scrotum was undeveloped, it being very easy to determine the cause, which was the non-descent of the testis. On examining the inguinal region, the patient in the upright posture, a mass, the size of a hen-egg, appeared on coughing. With some difficulty, however, this mass could be prevented from returning to the abdominal cavity, when the force of the impulse had subsided, by making deep pressure just above the internal ring at the instant of the protrusion. The contents were demonstrated to be composed of intestine and the small undescended testis; the latter, after considerable manipulations, was gotten out of the external abdominal ring, but the shortness of the cord caused it to be retracted as soon as resistance was removed. The hernia only

appeared on exertion and had never become completely scrotal, although incarceration had occasionally occurred, but subsided when the dorsal decubitus was assumed and perfect quiet maintained for a short time. While the hernia might have been a congenital one, the above symptoms had only been complained of for six months.

It was decided to apply a truss with the hope of retaining the hernia, at the same time not prevent the descent of the testis. Instructions were given to make moderate traction on the testis night and morning; the truss to be worn at all times. A celluloid apparatus was chosen that it need not be removed while bathing.

The above treatment was carried out for nearly two years with only slight improvement in the descent of the testis. Some pain had been experienced and the hernia had been down quite often.

With no more success from mechanical treatment, at the patient's request, operative interference was attempted, Jan. 2, 1892, with the hope of relieving him of the hernia without sacrificing the testis. The idea was to anchor the testis in the scrotum and afterward reconstruct the inguinal region according to Bassini's method, as follows:

With the pubis and scrotum shaven, under thorough aseptic precautions, an incision was made, beginning at the spine of the pubis, extending upward and outward for about four or five inches. The upper extremity reached to two inches, internal to and on a line parallel with the anterior superior spine of the ilium. Everything was divided down to the tendon of the external oblique muscle. The latter was incised over a grooved director, passed into the external abdominal ring, superficial to the hernial sac and cord structures. To expose the internal ring properly, the tendon was cut for about two or two and a half inches. The upper flap was then freed from the underlying structures and reflected toward the median line, until the conjoined tendon, composed of the internal oblique and transversalis muscles, was brought well into view. The lower flap or segment of the anterior wall of the inguinal canal was next dissected from its underlying fascia, until the shelving process of Poupart's ligament was exposed.

The flaps being held back by retractors, an endeavor to reproduce the testis was made and accomplished by traction on the vas deferens, a loop of which was firmly adherent to the sac. The adhesions to the testis and cord were relieved, well up to the internal ring. The sac, which proved to be congenital, was now opened and the finger passed into the internal ring that any adhesions might be detected. Being convinced of the absence of adhesions, the sac was

separated from the cord structures, ligated by transfixion at the internal ring and excised. The distal segment was taken off to within an inch of the testis, out of which a new tunica vaginalis was formed.

After the second step toward the reconstruction of the inguinal canal had been accomplished, that of bringing together with chromicized catgut the shelving process of Poupart's ligament on the lower and the conjoined tendon on the upper side, the testis was anchored to the bottom of the scrotum by passing three catgut sutures through the tunica vaginalis, dartos and skin simultaneously.

The third step was completed by closing the divided tendon of the external oblique muscle with a continuous catgut suture. The skin wound was closed with interrupted animal sutures and a small glass drain inserted. The tube was removed at the end of thirty-six hours, without disturbing the deeper portion of the dressing, which had been perforated, to allow the drain to be more superficial. The firm compress of gauze, which I always apply just over the internal ring and hold in position by adhesive plaster, which goes two-thirds around the pelvis, was not disturbed until the tenth day, when union was complete. The patient was kept recumbent for one week longer and discharged from the hospital at the end of three weeks.

On May 15th the patient was examined, after having worn a light truss since leaving the hospital. No inconvenience was complained of, the testis remaining about mid-scrotal without any tendency toward retraction. The truss was removed and no impulse could be gotten. He was advised to report monthly and to discontinue all apparatus.

Bassini's statistics from the reconstruction method for hernia alone are as follows:

"Two hundred and sixty-two were operated upon, ten of these were strangulated. Of the two hundred and fifty-one non-strangulated cases, one hundred and eight were observed from four and a half years to one year; thirty-three from one year to six months; ninety-eight from six months to one month; seven recurred; in four the results are unknown, and one died of shock."

Conclusions:—

1. The reconstruction method is the only plan yet adopted which attempts to place the inguinal canal in its physiological condition.

2. It is applicable to both strangulated and simple reducible hernia.

2. It should be performed in all cases of undescended testis when any difficulty is met with from mechanical treatment.

157 Madison Avenue.

Clinical Department.

A CLINICAL LECTURE ON CIRCUMCISION.

BY ROBERT H. M. DAWBARN, M.D.

Professor of Operative Surgery at the New York Polyclinic.

GENTLEMEN: These three little patients, each accompanied by his father, are all awaiting the same operation—that of circumcision. This is so simple a matter (although even herein there is a right and a wrong way) that I shall devote but few moments to its discussion. First, however, and by far more important to you than this demonstration, let me explain why I have advised it.

This first child has enuresis. No other cause for his wetting the bed being discovered, and ordinary medicinal means not having proved successful, it seems likely that irritation from a long and tight prepuce, with decomposing smegma in the fossa glandis may be, at least, one causative factor, by reflex action, and hence we advise the operation.

The second boy is in a pitifully nervous condition. He has a moderate degree of chorea; and after close questioning he admits that he masturbates as often as opportunity serves. Here, too, removal of the long foreskin will at least aid the success of other measures of treatment.

But the third boy is unlike either of these. He has had no convulsions, no epilepsy or other neurosis, no balanitis nor phymosis, no "ballooning" of the prepuce in urination from a tight outlet, no lithic deposits from urinary sediment retained—in a word, none of the troubles, either ordinary or extraordinary, which lead us upon occasion to agree that this operation is indicated.

He was brought here because of a broken finger; but this having received attention, he is now about to be circumcised because his father, after a talk with me, agrees that it will be a wise step.

The ground I take, gentlemen, and which I hope, upon reflection, you will maintain with me, is that *every* male child should be regarded by us as needing circumcision; and this not at all from religious reasons, although I entirely agree with our Semitic friends in thinking that Moses knew his business. As a sanitarian, he was in this, as in many other regulations and observances, thousands of years in advance of his time.

There are two propositions which I am about to advance to you, which, if accepted, leave us in no doubt as to our duty in this regard.

The first is, that male Hebrews are, in proportion to their numbers in the community, very much less

frequently the victims of venereal disease—especially syphilis and chancroid—than are Gentiles.

I do not think that anyone of experience denies this proposition. It has been affirmed repeatedly by able genito-urinary specialists. Neither does anyone suppose that this comparative immunity is due to superior virtue; Hebrews being as other average men in this regard.

But the explanation of their comparative safety, after unclean exposure, is perfectly simple and plain. As compared with Gentiles, they have much less extent of mucous surface to infect; and such as remains to them is so tough from constant dryness and chafing against clothing that it resembles skin rather than mucous membrane, and is very unlikely to become abraded during connection, thereby allowing entrance to poisonous virus.

The second proposition of the two postulates to which I referred a few minutes ago, is this: that practically all physically sound men at some time in their lives have impure sexual congress; that is, connection outside of wedlock, and which is, therefore, doubtless more or less dangerous as regards risk of venereal disease—generally more rather than less dangerous. One of the most widely experienced genito-urinary surgeons in this city has repeatedly said before his classes that he does not ask a man whether he has had clap, but *how many times* he has had it! Of course this is strongly put by him for didactic reasons, and we make corresponding allowances. But the truth that remains is a painful truth.

This second proposition of mine sounds so cynical, and betrays so complete a disbelief in masculine virtue, so far as chastity is concerned, that I have hesitated to advance it; knowing that I shall be accused by some of slandering a whole sex. If true, it is shameful; and no one more than I, deplores this poisoning of all the wells of life. But never yet was real good accomplished by shutting the eyes and ignoring evil.

Suppose we compromise—if some of you shall think my assertion too sweeping—by allowing five per cent. for men of chastity; possibly more yet in country places, where temptation and opportunity are relatively lacking.

Of course, this question is one the real truth of which can never be reached by heated affirmation or denial. I am inclined, against my will, to the view I maintain; and my position is strengthened by the fact that other physicians with whom I have discussed this matter, have agreed with me. Because of his peculiar and confidential relations with his patients, who do not hesitate to tell him the truth, the family physician can ascertain such facts as can no one else.

As a side-issue of, perhaps, only philological interest let me remark that a few months ago the professor of

Latin in Columbia College was asked whether he knew of any language, either ancient or modern, the vocabulary of which contains any word meaning a *male* virgin—a man who never has had sexual congress.

He asked for time to look up this novel point, and finally replied that he could find no such single word in any tongue; although all of them had the word *virgin*, or its equivalent, as applied to *woman*.

It would seem not a strained inference from this, perhaps, that if that word had been needed, it would be found in *some* language.

Now, gentlemen, to return to our mutton. If the comparative immunity of circumcised men regarding venereal disease be granted, and if the very great lack of chastity in the male be granted, there is no escape from the conclusion that we have a reason of the strongest and the most vital importance to the human race, in advocating invariable circumcision. This matter has been neglected by the profession in the blindest way; it seems hardly excusable.

I have never yet had a father refuse it for his boy after a few minutes plain talk in which these facts were placed before him. He *hopes* that his boy will not, in later years, succumb to temptation as so many others do; but at least he has taken a step that may prevent ruination of that young life, should the boy be unchaste.

A few words now regarding the technique of the three operations which you have just seen me complete. One was under ether, two under cocaine injected hypodermatically as you saw. This is largely a matter of personal choice. In each you noticed that a piece of drainage-tubing was kept fastened about the root of the penis until all cutting was completed; thereby promoting speedy work, avoiding unnecessary loss of blood, and in the case where cocaine was used, the tube maintained prolonged anaesthesia—for obvious reasons.

I do not approve a simple slitting of the prepuce alone. For reasons just given, it should be removed, at least in greater part. I leave, as you see, just enough to cover the corona glandis. But the simplest and safest technique begins with slitting the foreskin up the dorsum glandis on a grooved director, after which I seize with a forceps the cut edge and trim away with scissors both skin and mucous membrane at the same stroke. At the frenum it is left moderately long.

The suture was a running one of antiseptic catgut; in size, first octave harp-string. The line of union I now paint with aristol flexile collodion, five per cent.

The subsequent treatment is of the simplest. Do *not* use any ointment; it will cause the collodion to stick to everything. I supply the parents with any safe dusting-powder, such as rice, bismuth or talcum,

and plenty of absorbent cotton. The surfaces are kept well dried and dusted, and wrapped in the cotton to prevent chafing; it being held in place with a T-bandage of napkins.

The mother should be warned to expect several days of edematous swelling in what is left of the prepuce. I have never had occasion to puncture or otherwise treat this; it disappears in a few days.

The stitches will be absorbed in a week or less, their superficial portion coming away with the collodion-scale and leaving a healed surface beneath.

ACTINOMYOISIS.

BY R. C. M. PAGE, M.D.

Professor of Practice of Medicine at the New York Polyclinic.

Actinomycosis, as is now well known, is an infectious disease that is caused by the radiating fungus called the *actinomyces bovis*. Though its true pathology is of comparatively recent date, it is not a new disease. There is reason to believe that it has heretofore often been confounded with cancer, tuberculosis, scrofula and even glanders. According to Crookshank, the disease was prevalent in Scotland, from 1825 to 1835. It also exists in Germany and Australia, but is more frequently met with among the great cattle herds of the United States of America than anywhere else. But even here the disease is so rare that there is no cause for alarm of its spreading to any appreciable degree.

The disease is more common among cattle than men. It does not appear to spread from animals to man through the digestive tract due to the eating of meat, especially when cooked. But in all cases the fungus or germ of the disease is derived from vegetable diet, preferably hay or grain of some sort. Cattle, as already stated, are either more susceptible to the poison than men, or else are more exposed to the cause. In either case the disease does not appear to spread between animals, nor do men become affected through eating the meat of infected cattle; but both acquire the malady in a similar way—that is by inhaling or swallowing the germs as contained in grain or hay. Beginning in the mouth, usually, the pus in the resulting abscesses about the lower jaw is carried by lymphatics to other parts, giving rise to pulmonary and peri-pleuritic metastatic abscesses. In some cases a general pyæmia results.

Among the cattle affected that I have seen, the disease began as a hard tumor of the lower jaw and was regarded as "hard cancer." But in each case an abscess formed, followed by multiple abscesses elsewhere. The animals were killed on the ground that they had some dangerous infectious disease. In each

case the characteristic fungus was found. One such case occurred many years ago in a neighboring village, before I ever studied medicine; but the signs were so identical with others that I have observed since then, that I am quite sure that it was a case of actinomycosis. The deacon of the church who owned the ox and sold it for butcher's meat, was for a long time the subject of gossip, and was severely accused for selling a cancerous ox for human food. But in no case did the disease spread, so that the matter gradually subsided, but is still talked about.

There need, therefore, be no special alarm or apprehension among the laity that the disease in question will ever prove to be a source of danger as regards infection from eating the flesh of such animals, especially when properly cooked. Moreover, at the stock yards in Chicago, and elsewhere in the United States, the authorities are careful and trustworthy about excluding such infected cattle. The treatment of this very dangerous disease, as is well known and to be expected, is as yet merely palliative and symptomatic.

Partial Pneumectomy for Gangrene; Recovery.—Dr. Delageniere reports the case of a man, aged 37, who suffered from a pulmonary abscess, probably of gangrenous character. A V-shaped incision was made over the ninth rib through the skin and muscles. Then, subperiosteal resection of the ninth, eighth and seventh ribs was performed from the posterior angle to the chondro-costal articulation. The pleura was incised to the extent of 12 to 15 centimetres over the ninth intercostal space, and a purulent focus was discovered, containing about 500 grammes of pus and decomposed detritus. This focus was limited below by the diaphragm, above by the lower lobe of the lung which was gangrenous. All the gangrenous portions were carefully excised, leaving in the lower lobe a cavity of the size of a fist. Two drains were applied, one in the cavity, the other in the pleural opening, after which the pleura and the wounds were sutured. Recovery took place rapidly; at the end of the first month the drains were removed and two weeks later the cure was complete. Mr. Delageniere attributes the failures of most operations of this kind to the fact that the gangrenous focus had been simply drained, instead of being extirpated. The operation to be successful should be thorough.—*Progrès Medical.*

The Pathognomonic Signs of Perforating Appendicitis.—Dr. Simon Baruch (*Med. Record*) emphasizes the point that symptoms of shock, carefully looked for, may always be found in perforating

appendicitis. These are as follows: the countenance is anxious, the finger-tips, nose and ears are cool; pulse and respiration are out of proportion to temperature, the right inguinal region is very tender, the patient usually lies with the right leg drawn up. Guided by them, Dr. Baruch opposed the views of an experienced physician in one case, insisting upon the operation; and in another did not approve of the operation advised by an experienced surgeon. In both cases his reliance on these pathognomonic signs proved useful to the patient. On the ground of his own experience, as well as that of others, the author urges that when perforating appendicitis is diagnosed, either positively or probably, an immediate operation to remove the exciting cause is as imperative as ligation of the vessel in hemorrhage.

The fact that laparotomies are now constantly performed, under strict asepsis, with absolute safety, should induce the attendant to clear up a doubtful diagnosis of perforating appendicitis by an operation before septic peritonitis forbids it.

In the August issue will be published the following interesting original articles: "The Causes and Treatment of Sinuses Resulting from Abdominal Section," by Dr. Andrew F. Currier, of New York; "Combined Gynecological Operations," by Dr. Geo. M. Edebohls, of New York; "Osteo-Myelitis," by Dr. Chas. G. R. Jennings, of Elmira, N. Y.; The Treatment of Hemorrhoids by Carbolic Acid Injections," by Dr. J. W. Hallum, of Carrollton, Ga.

In response to a request made by us in the June number of the Journal, Dr. Chas. Smith, of Orangeville, Ontario, has kindly informed us that he is the author of the paper, "On the Surgical Pathology of the Bone Medulla and Spleen." It affords us much pleasure to make this acknowledgment on account of the value of his contribution.

The committee of surgeons to whom was entrusted the award of prize essays, have had considerable difficulty in reaching a decision on account of the general excellence of the papers submitted. They have awarded the first prize, a microscope, to Dr. Francis Reder, of Hannibal, Mo., for a paper on "A New Method of Intestinal Surgery," to be published in the August number, and the second, an aseptic pocket operating case, to Dr. Henry S. Shively, of New York, for a "Contribution to the Etiology and Treatment of Spasmodic Torticollis," which appeared in the May issue.

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 August Seibert, M. D., Professor of Diseases of Children; Visiting Physician to St. Francis Hospital; Physician to the Children's Department of the German Dispensary.
 H. Marion Sims, M. D., Professor of Gynecology; Gynecologist to St. Elizabeth Hospital and New York Infant Asylum.
 William F. Flusher, M. D., Professor of Genito-Urinary Surgery; Surgeon to Bellevue and Mt. Sinai Hospitals.
 Henry C. Coe, M. D., M. R. C. S. (Eng.), Professor of Gynecology; Gynecologist to New York Cancer Hospital; Assistant Surgeon to Woman's Hospital; Obstetric Surgeon to Maternity Hospital; Obstetrician to New York Infant Asylum.
 Edward A. Ayers, M. D., Professor of Obstetrics; Attending Physician to the New York Lying-in Asylum, Out-door Department.
 Robert H. M. Dawbarn, M. D., Professor of Operative Surgery and Surgical Anatomy.

LECTURERS.

J. Riddle Goff, M. D., Lecturer on Gynecology; Assistant Gynecologist to New York Skin and Cancer Hospital; Attending Gynecologist to Northwestern Dispensary; Attending Physician to Episcopal Orphan Asylum; Visiting Gynecologist to Randall's Island Hospital.
 R. M. Cramer, M. D., Lecturer on Surgery; Assistant Physician to Manhattan Hospital, Department of Nervous Diseases.
 William S. Gottheil, M. D., Lecturer on Dermatology; Attending Physician to Northwestern Dispensary, Skin Department.
 Neil J. Hepburn, M. D., Lecturer on Ophthalmology; Assistant Surgeon to Manhattan Eye and Ear Hospital; Surgeon to Eye and Ear Department of Demilt Dispensary; Ophthalmologist to Randall's Island Hospital.
 John Seymour Thacher, M. D., Lecturer on Pathology, Bacteriology, Clinical Microscopy and General Medicine; Pathologist to Presbyterian and State Emigrant Hospitals, and to the Colored Home and Hospital.
 Brooks H. Wells, M. D., Lecturer on Gynecology.
 W. W. Van Arsdale, M. D., Lecturer on Surgery and Surgical Dressings; Assistant Surgeon to New York Cancer Hospital; Attending Surgeon to Eastern Dispensary.

Justin L. Barnes, M. D., Lecturer on Ophthalmology; Assistant Surgeon to Manhattan Eye and Ear Hospital.
 James P. Tuttle, M. D., Lecturer on Diseases of Rectum and Anus.
 Wm. R. Pryor, M. D., Lecturer on Gynecology; Physician to St. Elizabeth Hospital.
 Francis J. Quinlan, M. D., Lecturer on Laryngology and Rhinology; Laryngologist to the Northern Dispensary; Assistant Surgeon to New York Eye and Ear Infirmary; Clinical Assistant, Department Diseases of Throat, in the College of Physicians and Surgeons.
 H. L. Collyer, M. D., Lecturer on Gynecology.
 Frederick Peterson, M. D., Lecturer on Nervous and Mental Diseases; Chief of Clinic, Nervous Department, Vanderbilt Clinic; Attending Physician to New York Hospital for Nervous Diseases (Blackwell's Island); Pathologist to the New York City Lunatic Asylum.
 Matthew D. Field, M. D., Lecturer on Mental Diseases.
 J. Herbert Clalborne, M. D., Lecturer on Ophthalmology; Instructor in Diseases of Eye, Vanderbilt Clinic; Attending Surgeon to Northwestern Dispensary, Eye, Ear and Throat Department.

(Continued on next page.)

LECTURERS.—Continued.

- E. J. Ware, M. D.**, Lecturer on Physical Diagnosis and General Medicine; Assistant Attending Physician to Roosevelt Hospital (Out-door Department).
- Floyd M. Crandall, M. D.**, Lecturer on Diseases of Children; Assistant Surgeon to New York Skin and Cancer Hospital.
- W. P. Pritchard, M. D.**, Lecturer on Mental and Nervous Diseases.
- Franklin Soper, M. D.**, Lecturer on Otolaryngology; Assistant Surgeon to Manhattan Eye and Ear Hospital; Ophthalmic and Aural Surgeon to St John's Riverside Hospital, Yonkers.
- S. M. Payne, M. D.**, Lecturer on Ophthalmology; Assistant Surgeon to the Manhattan Eye and Ear Hospital.
- John A. Fordyce, M. D.**, Lecturer on Dermatology; Attending Surgeon to Out-door Department of Bellevue Hospital; Department of Skin and Genito-Urinary Diseases at St. Bartholomew's Hospital and Dispensary.
- A. B. Pope, M. D.**, Lecturer on Diseases of the Chest and General Medicine; Attending Physician to Demilt Dispensary, Diseases of the Chest.
- Egbert Le Feuvre, M. D.**, Lecturer on Diseases of the Chest and General Medicine; Lecturer in Department of Medicine and Clinical Assistant to the Chair of Practice, Medical Department, University of New York.
- Carl Koller, M. D.**, Lecturer on Ophthalmology; Assistant Surgeon to the New York Eye and Ear Infirmary, and Ophthalmologist to the Montefiore Home for Chronic Invalids.
- J. Oscroft Tansley, M. D.**, Lecturer on Otolaryngology; Assistant Surgeon to Manhattan Eye and Ear Hospital.
- Matthias L. Foster, M. D.**, Lecturer on Otolaryngology, Surgeon to Out-door Department of Bellevue Hospital; Assistant Surgeon to Manhattan Eye and Ear Hospital.
- R. H. Wyllie, M. D.**, Lecturer on Gynecology.
- Dillon Brown, M. D.**, Lecturer on Intubation.
- Henry J. Kelly, M. D.**, Lecturer on Surgery.
- S. E. Milliken, M. D.**, Lecturer on Surgery; Assistant Surgeon to Hospital for Ruptured and Crippled, Hernia Department.
- W. F. Martin, M. D.**, Lecturer on Diseases of Children; Assistant Surgeon to St. Andrew's Infirmary; Curator to Randal's Island Hospital.
- A. N. Strouse, M. D.**, Lecturer on Ophthalmology.
- George W. Jarman, M. D.**, Lecturer on Operative Gynecology; Assistant Gynecologist to the Cancer Hospital; Physician to Class for Diseases of Women, Vanderbilt Clinic.
- S. T. Armstrong, M. D.**, Lecturer on Fractures and Bandaging.

INSTRUCTORS.

- Gustav A. Kletzsch, M. D.**, Instructor in Gynecology; Assistant Gynecologist to New York Cancer Hospital; Assistant Surgeon to Woman's Hospital.
- Fred'k H. Dillingham, M. D.**, Instructor in Dermatology.
- F. W. Ring, M. D.**, Instructor in Ophthalmology; Assistant Surgeon to Manhattan Eye and Ear Hospital.
- G. F. Carey, M. D.**, Instructor in Ophthalmology; Assistant Surgeon to Manhattan Eye and Ear Hospital.
- Herman F. Nordeman, M. D.**, Instructor in Genito-Urinary Surgery.
- W. N. Hubbard, M. D.**, Instructor in Department of General Medicine; Attending Physician Out-door Department Bellevue Hospital.
- Charles E. Jackson, M. D.**, Instructor in Ophthalmology; Assistant Surgeon to New Amsterdam Eye and Ear Hospital.
- George W. Caldwell, M. D.**, Instructor in Ophthalmology; House Surgeon to New Amsterdam Eye and Ear Hospital.
- Wm. C. Rives, M. D.**, Instructor in Diseases of the Chest and General Medicine; Physician to Newport Hospital, R. I.
- Edward N. Liell, M. D.**, Instructor in Gynecology.
- E. Gaillard Mason, M. D.**, Instructor in Mental and Nervous Diseases.
- T. J. McGillicuddy, M. D.**, Instructor in Obstetrics; Visiting Obstetric Surgeon to New York Mother's Home and Maternity Hospital; Surgeon to Yorkville Dispensary and Hospital for Women and Children; Physician to Macdalen Asylum, St. Joseph's Infirmary for Children; Physician to Institution of Mercy.
- William R. Ballou, M. D.**, Instructor in Genito-Urinary and in General Surgery; Surgeon Bellevue Hospital, Out-door Department.
- L. J. Ledinski, M. D.**, Instructor in Gynecology; District Physician to Mt. Sinai Hospital.
- B. W. McNichol, M. D.**, Instructor Department of Otolaryngology; Assistant Surgeon to Manhattan Eye and Ear Hospital.
- M. F. Crowley, M. D.**, Instructor in Ophthalmology.
- Geo. A. Richards, M. D.**, Instructor in Department of Laryngology and Rhinology; Clinical Assistant to Throat Department of Vanderbilt Clinic.
- G. W. Eschel, M. D.**, Instructor in Department of Children; Visiting Physician to St. Mark's Hospital and Children's Department of German Polyklinik.
- Bennett S. Beach, M. D.**, Instructor in Pathology, Bacteriology and Clinical Microscopy.
- Geo. A. Tuttle, M. D.**, Instructor in Pathology, Bacteriology and Clinical Microscopy.
- J. E. Giles, M. D.**, Instructor in Ophthalmology; Assistant Surgeon to the Manhattan Eye and Ear Hospital.
- S. T. Armstrong, M. D.**, Instructor in Mental and Nervous Diseases, and Surgical Appliances.
- Alfred Wiener, M. D.**, Instructor in Mental and Nervous Diseases.
- Thomas S. Bronson, M. D.**, Instructor in Ophthalmology.
- W. Evelyn Porter, M. D.**, Instructor in Gynecology; Assistant Surgeon to New York Cancer Hospital.
- J. F. Gray, M. D.**, Instructor in Gynecology.
- F. Pierce Hoover, M. D.**, Instructor in Otolaryngology; Clinical Assistant to Manhattan Eye and Ear Hospital.
- Walter E. S. Preston, M. D.**, Instructor in Department of Diseases of Chest and General Medicine.
- Howard G. Myers, M. D.**, Instructor in Operative Surgery.
- S. M. Payne, M. D.**, Instructor in Laryngology.

CLINICAL ASSISTANTS.

- C. E. Kerley, M. D.**, Department of Gynecology; Resident Physician N. Y. Infant Asylum, Mt. Vernon.
- A. B. Tucker, M. D.**, Department of Gynecology; Visiting Physician to Northwestern Dispensary.
- L. F. Kiefer, M. D.**, Department of Dermatology; Visiting Physician to German West Side Dispensary.
- C. S. Wood, M. D.**, Department of Gynecology; Out-door Department Roosevelt Hospital.
- H. M. Painter, M. D.**, Department of Throat and Nose.
- H. W. Woottton, M. D.**, Department of Diseases of Chest and General Medicine; Attending Physician to Northeastern Dispensary.
- J. H. Brower Browning, M. D.**, Department of Surgery; Medical Examiner for Presbyterian Board of Foreign Missions; Alternate Medical Examiner New York Equitable Life Assurance Society.
- Charles Lewis Allen, M. D.**, Department of Diseases of Chest and General Medicine; Assistant Physician to Bellevue Out-door Department and Demilt Dispensary.
- Howard Lillenthal, M. D.**, Department of General Surgery; Surgeon to the Dispensary of Mt. Sinai Hospital.
- James Stafford, M. D.**, Department of Gynecology and Surgery; Visiting Surgeon Northern Dispensary.
- M. Gross, M. D.**, Department of Children.
- S. B. Minden, M. D.**, Department of Orthopedic Surgery.
- Walter F. Morrison, M. D.**, Department of Laryngology and Rhinology.
- J. B. Hallwood, M. D.**, Department of Otolaryngology; Clinical Assistant to Manhattan Eye and Ear Hospital.
- J. A. R. Robinson, M. D.**, Department of Dermatology.
- E. Broquet, M. D.**, Department of Genito-Urinary Surgery.
- F. C. Husson, M. D.**, Department of Genito-Urinary Surgery.
- W. G. States, M. D.**, Department of Genito-Urinary Surgery.
- R. C. Shultz, M. D.**, Department of Mind and Nervous System.
- D. M. Wooly, M. D.**, Department of Otolaryngology; Surgeon-in-Chief to Long Island Throat and Lung Hospital.
- J. A. Blake, M. D.**, Department of Otolaryngology; Clinical Assistant to Manhattan Eye and Ear Hospital.
- Alexander Lyle, Jr., M. D.**, Department of Gynecology; Physician to Northeastern Dispensary.
- A. Wakefield, M. D.**, Department of Ophthalmology.
- Peter V. Burnett, M. D.**, Department of Laryngology and Rhinology; Surgeon to Brooklyn Nose and Throat Hospital; Laryngologist to St. Catharine's Hospital, Brooklyn.
- M. D. Lederman, M. D.**, Department of Laryngology and Rhinology; Clinical Assistant to the Throat Department of Manhattan Eye and Ear Hospital.
- J. Douglas Nisbet, M. D.**, Department of General Medicine.
- J. Eugene Kinney, M. D.**, Department of General Medicine.
- Morton R. Peck, M. D.**, Department of Gynecology.
- H. E. Stafford, M. D.**, Department of Otolaryngology and of Ophthalmology; Clinical Assistant to Manhattan Eye and Ear Hospital.
- Chas. Bartols, M. D.**, Department of Diseases of Children.
- Geo. S. Lynde, M. D.**, Department of Diseases of the Skin.
- A. Abruzzo, M. D.**, Department of Gynecology.
- Charles E. Harvey, M. D.**, Department of Surgery.
- S. B. Battey, M. D.**, Department of Surgery.
- B. W. Stiebel, M. D.**, Department of Obstetrics.
- Bartlett Gilbert, M. D.**, Department of Obstetrics.
- B. Gilbert, M. D.**, Department of Diseases of the Chest and General Medicine.
- Franklin B. Lawson, M. D.**, Department of Diseases of the Chest, and General Medicine.
- Thomas S. Southworth, M. D.**, Department of Diseases of Children.
- F. T. Metcalfe, M. D.**, Department of Diseases of the Nervous System.
- Henry D. White, M. D.**, Department of Laryngology.
- L. J. Norton, M. D.**, Department of Diseases of Mind and Nervous System.
- Geo. W. Caldwell, M. D.**, Department of Laryngology; House Surgeon in New Amsterdam Eye and Ear Hospital.

ANNOUNCEMENT.

The New York Polyclinic closes with the Session of 1891-92, the tenth year of its existence. Within this decade more than 3,100 Graduates in Medicine and Surgery have attended its course of study. Organized in 1880-81 and opened in 1882, it was the first Post Graduate Medical School in America, independent of an Under-graduate College. The class numbered in 1882-3, 161; '83-4, 182; '84-5, 229; '85-6, 240; '86-7, 301; '87-8, 387; '88-9, 383; '89-90, 422; '90-1, 462; '91-2, 478. The teachers are members of the Medical Profession of New York, who, in their personal connections with the city hospitals and dispensaries, control a vast clinical material.

The following hospitals, asylums and dispensaries are represented by them : New York Polyclinic Hospital, Bellevue, Mount Sinai, Charity, Hospital for Ruptured and Crippled, Montefiore Home, Episcopal Orphan Asylum, Western Skin Infirmary, St Elizabeth, Woman's, German, St. Mary's, New York Cancer, St. Joseph's, New York Lying-in, Manhattan Eye and Ear, New Amsterdam Eye and Ear, St. Bartholomew's, Sheltering Arms, State Emigrant, Maternity, Nursery and Child's Lying-in Hospitals, New York Eye and Ear Infirmary, New York Infirmary for Women and Children, Randall's Island, New York Infant Asylum, Babies' Hospital, Orphans' Home and Asylum, New York Orphan Asylum, Colored Home and Hospital, Metropolitan Throat Hospital, New York Skin and Cancer Hospital, Vanderbilt Clinic, Tremont Hospital for Consumptives, Out-door Departments of Bellevue, New York, Roosevelt, German, Northern, Northwestern, Northeastern, Demilt, Eastern, Western and German Dispensaries.

THE POLYCLINIC HOSPITAL.

While the operative work of the great hospitals mentioned above is freely open to our matriculants, there are obviously many special advantages attained in having hospital wards in the same building with the school. The Polyclinic Hospital occupies the upper floors of the building, 214 and 216, and the building No. 218 East 84th Street. It is divided into six wards and fifteen private rooms, wherein all classes of cases, except contagious diseases, can be studied. In addition to the above the Polyclinic maintains a dispensary in its own building, where, in the presence of the matriculants, from 12,000 to 15,000 patients are treated annually. This material, classified into nine departments, is submitted to the members of the class at specified hours, for personal examination and study, under the guidance of the various teachers. The classes, however large, will be divided into sections of a limited number, or the number of clinics increased, so that the members will be brought into intimate personal contact with the patients, where the clinical features of each case may be minutely and leisurely studied and thoroughly understood. The directors and faculty of the Polyclinic believe that nowhere in the Western Hemisphere is clinical material so abundant and so readily utilized for the advancement of science as in the city of New York, with the great hospitals and dispensaries of which a half million of sick and injured human beings are gratuitously treated each year.

The winter session of 1892-'93 will open September 19th, 1892, and will continue to June 1st, 1893.

Only practitioners who are Graduates of a Regular Medical College, or who, having attended one or more courses of lectures at such college, have a legal permit to practice, will be admitted at this school. Such practitioners are requested to bring their diploma or certificate of membership in a Regular Medical Society; they can then be matriculated at any date, enabling them to take advantage of the clinics when most convenient to themselves. One or more subjects may be studied at a time. The schedule of the clinics published herewith, on the last page, will show the amount of time that will be occupied each day in the study of any one subject.

The following is a list of charges for tickets to the various departments :

	For 6 Weeks.	For 3 Months.	For 6 Months.	For 1 Year.
Diseases of the chest, physical diagnosis and general medicine.....	\$25 00	\$45 00	\$80 00	\$140 00
" of children.....	15 00	25 00	40 00	60 00
" of the nervous system and electrotherapy.....	15 00	25 00	40 00	60 00
" of the throat, nose and ear.....	20 00	35 00	60 00	100 00
General surgery.....	85 00	65 00	120 00	220 00
Diseases of women.....	85 00	65 00	120 00	220 00
" of the eye.....	15 00	25 00	40 00	60 00
" of the skin.....	15 00	25 00	40 00	60 00
Obstetrics.....	15 00	25 00	40 00	60 00
Surgical operations on the cadaver, each course.....	25 00			
Clinical Microscopy and urinary analysis, each course.....	15 00			
Practical Histology and Pathology, each course.....	15 00			
Bacteriology, each course.....	15 00			
Intubation, each course.....	10 00			

In order to encourage continuous attendance in the clinical studies of the Polyclinic, a *general ticket*, admitting the holder to all the lectures except those in Clinical Microscopy, Practical Histology and Pathology, Bacteriology and Operative Courses upon the Cadaver and Intubation, will be issued for twelve months for \$350; six months, \$250; three months, \$150; and for six weeks, \$100.

Certificates of attendance upon one or more of the branches of study at the Polyclinic will be furnished matriculants.

The cost of a certificate will be \$5.00.

There is no private instruction given by the members of the Faculty or Staff upon any of the subjects taught in the Polyclinic.

When for any reason such as illness, or urgent business, any Professor or Lecturer is absent from his clinic, the lecture and direction of the clinic will be entrusted to another Professor or to one of the staff of assistants in that Department.

Every physician wishing to matriculate at this school is required to bring a letter of introduction from some regular practitioner acquainted with a member of this Faculty, or credentials from the college of which he is a graduate, signed by the proper officer and stamped with the official seal of such college, or a certificate of membership in some *regular* county, or State Medical Society. As before stated graduates of *irregular* schools are refused matriculation.

No money paid for fees will be refunded after the ticket is issued.

Every matriculant is expected to show his ticket of admission to each clinical lecture at the door of entrance to the clinic.

A complimentary ticket will be issued for two days if desired by physicians who wish to inspect the School.

THE HOSPITAL STAFF.

Two appointments to the Hospital Staff will be made each year. The selections will be made after competitive examination of all applicants, by the Executive Committee of the Polyclinic. The successful candidates will receive board and lodging in the hospital while on duty.

GENERAL INFORMATION.

As to the best months for attending clinics, there can be no choice for the *Regular Session* from September to June. From Nov. 15th to Jan. 1st, the classes are somewhat smaller than before and after that time.

The clinical material is abundant throughout the term. It is advisable to divide the time of study between work in the Polyclinic and in the numerous large Hospitals where the classes are admitted to the wards and operating rooms. Physicians who intend to study in the departments of the Eye, Ear, Throat and Nose, should bring with them the ordinary instruments used in these branches. Those wishing to obtain the certificates of study must bring the credentials above stated.

Board and lodging can be obtained in the immediate vicinity of the school at prices varying from \$6 to \$8 per week. Physicians arriving in the city during the day should come directly to the Polyclinic, No. 214 East 84th Street, where assistance will be given them in procuring board by a clerk of the School specially employed for this service. If the city is reached after 6 P. M., the following hotels will be found near the college: Park Avenue Hotel, 88d Street and Park Avenue; Grand Union and Murray Hill Hotels, at the Grand Central Depot, 42d Street and Fourth Avenue.

PLAN OF INSTRUCTION IN THE VARIOUS DEPARTMENTS.

GYNECOLOGY.

Professors: PAUL F. MUNDE, M. D.

H. MARION SIMS, M. D.

W. GILL WYLIE, M. D.

HENRY C. COE, M. D.

Lecturers: J. RIDDLE GOFFE, M. D.

WM. B. PRYOR, M. D.

HERMAN L. COLYER, M. D.

BROOKS H. WELLS, M. D.

Instructors: G. A. KLETZSCH, M. D.

G. W. JARMAN, M. D.

EDWARD N. LIELL, M. D.

W. EVELYN PORTER, M. D.

JOSEPH F. GRAY, M. D.

Assistants: A. B. TUCKER, M. D.

JAMES STAFFORD, M. D.

C. G. KERLEY, M. D.

MORTON R. PECK, M. D.

A. ABRUZZO, M. D.

ALEXANDER LYLE, JR., M. D.

GUSTAV W. BRATENAHE.

In this department the course of study consists in the presentation of cases for examination, diagnosis and treatment. The members of the various sections are called in regular order to examine the patients, and to determine the diagnosis and treatment under the supervision of the teacher. None but those who are members of the particular section for the benefit of which the clinic is given will be allowed to take part in the examinations. Members of other sections of this class may, however, remain in the lecture room, taking seats in the rear of the section in immediate attendance. *Each member of the class in gynecology will be entitled to four special clinics each week, with the privilege, as above stated, of attending but not taking an active part in other clinics for the diseases of women.*

In the hospital clinics the more important operations of laparotomy, lacerations of the cervix and perineum, fistula, etc., will be performed before limited sections of the class.

Professor Mundé will hold his clinics on Mondays and Thursdays of each week from 3 to 4 P. M., at the Polyclinic, and a special operative clinic at Mt. Sinai Hospital on Wednesdays at 2:20 P. M. Extra clinics will be announced on the college bulletin.

Professor Wylie will, on Tuesdays and Fridays, at 10 A. M., hold a clinic at the Polyclinic, and will operate in his wards in Bellevue Hospital on Wednesdays at 8 P. M. Extra clinics at Bellevue Hospital will be specially announced.

Professor H. Marion Sims, in addition to his clinics on Mondays and Thursdays, 9-10 A. M., will give operative clinics at stated times at St. Elizabeth Hospital.

Professor Coe will lecture every Wednesday at 9 A. M. and Friday at 8 P. M. Special attention will be paid to non-surgical gynecology, pessaries, the local application of electricity, etc. Professor Coe will hold a surgical clinic at the New York Cancer Hospital every Wednesday at 8 P. M., at which students will be instructed in the treatment of malignant disease of the uterus. He will also operate at the Woman's Hospital at hours to be designated. Drs. Kletzsch and Jarman will also operate at both the Woman's and Cancer Hospitals, especially during the summer term, when these gentlemen will have charge of the clinics. Dr. Jarman will lecture on operative gynecology every Friday evening at seven during the Winter term.

Through the courtesy of Drs. Hanks, Nicoll and Cleveland, a limited number of invitations are issued to their operations at the Woman's Hospital, and to Dr. Cleveland's clinic at the Cancer Hospital.

In addition to the above clinics are those of Dr. Goffe, Dr. Collyer and Dr. Wells.

By the courtesy of Dr. T. A. Emmet the instructive clinics held at the Woman's Hospital are open to a limited number of the members of the class in Gynecology at the Polyclinic.

SURGERY.

Professors: J. A. WYETH, M. D.

V. P. GIBNEY, M. D.

ARPAD G. GERSTER, M. D.

Lecturers: J. P. TUTTLE, M. D.

R. M. CRAMER, M. D.

W. W. VAN ARSDALE, M. D.

W. R. TOWNSEND, M. D.

HENRY J. KELLY, M. D.

S. E. MILLIKEN, M. D.

S. T. ARMSTRONG, M. D.

HOWARD LILIENTHAL.

Instructor: W. H. BALLOU, M. D.

Assistants: F. C. HUSSON, M. D.

E. BROQUET, M. D.

CHARLES F. HARVEY, M. D.

J. H. BROWER BROWNING, M. D.

S. B. MINDEN, M. D.

AFFOIRS MULLER.

JAMES S. ENNIS,

S. B. BATTEY, M. D.

J. STAFFORD, M. D.

G. D. GOLDSTEIN, M. D.

W. D. SEWELL.

From 11 to 12 A. M. clinics will be given at the Polyclinic, which will illustrate the diagnosis and treatment of the various surgical diseases, deformities and injuries.

On Wednesdays and Saturdays Professor Gibney will hold the clinics on Orthopedic Surgery. On Tuesdays and Fridays at 8:30 A. M. operations and exhibition of patients on whom operations have been performed at the Hospital for the Ruptured and Crippled. Facilities for attending these hospital clinics will be given members of the class. On alternate days at this hour, sections of the class will be admitted to the clinics in general surgery, and to the study of cases in the hospital wards. A regular clinic, in which all the usual major operations will be performed, will be held during the fall and winter at Mt. Sinai and German Hospitals, by Professors Wyeth, Gerster and Fluhrer. Professor Gerster will give one clinical lecture in the afternoon at the Polyclinic and two clinics at the Mt. Sinai or German Hospitals each week.

On one day of each week, from 8 to 9 P. M., Dr. Kelly will give practical instruction in bandaging, the use of surgical appliances, and the various methods of using plaster-of-Paris.

During the winter session Dr. W. W. Van Arsdale will give a series of lectures upon the antiseptic method in surgical practice, with demonstrations of the mode of preparing the antiseptic material.

OPERATIVE SURGERY AND SURGICAL ANATOMY.

Professor: ROBERT H. M. DAWBARN, M. D.

Instructor: HOWARD GILLESPIR MYERS, M. D.

Assistant: S. S. COLLINS, M. D.

This course consists of daily lessons, covering a period of between two and three weeks; and Professor Dawbarn will demonstrate a large number of operations.

These operations are performed by the members in turn, after a description by the Professor of the most recent methods. The operations comprise the ligations of arteries, amputations, excisions of joints, the special surgery of the abdomen, including lithotomy and gunshot wounds of the intestines, also skull, tracheal, thoracic and other regional work in general surgery. Much time is devoted to small and frequently needed operations.

Work begins on or about September 15th, and ends with the advent of warm weather in May.

Each class is limited to six members. Membership is in the order of taking out tickets.

GENITO-URINARY SURGERY.

Professor: W. F. FLUHRER, M. D.

Lecturer: H. F. NORDEMAN, M. D.

Instructors: F. C. HUSSON, M. D.

W. R. BALLOU, M. D.

Assistants: W. G. STATES, M. D.

JAMES TITTERINGTON, M. D.

JAMES S. ENNIS, M. D.

CHARLES TRUMBULL, M. D.

Four clinics each week will be given at the Polyclinic, on the special surgery of the Genital and Urinary Organs, by Professor Fluhrer and his assistants. Professor Fluhrer will also operate before the classes in Bellevue and Mount Sinai Hospitals.

DISEASES OF THE RECTUM AND ANUS.

Lecturer: JAMES P. TUTTLE, M. D.

This course consists in two clinics weekly, held from 7 to 8 P. M., at which are exhibited and treated all the ordinary diseases of the Rectum and Anus. Special attention is given to the anatomy and physiology of the Rectum. An effort is made to give each student opportunities for the examination and diagnosis of cases, and they are called upon in turn to assist in the various operations. Much time is spent in familiarizing the class with the practical application of the instruments and methods used in the local treatment of these diseases, as the clinic furnishes an abundant supply of material for such studies.

HERNIA AND ASSOCIATED DISEASES.

Lecturer: S. E. MILLIKEN, M. D.

Two clinics a week, from 9 to 10 A. M., are devoted to the operative and mechanical treatment of hernia.

DISEASES OF THE CHEST, PHYSICAL DIAGNOSIS AND GENERAL MEDICINE.

Professors: R. C. M. PAGE, M. D.

HENRY M. HEINEMAN, M. D.

Lecturers: A. B. POPE, M. D. W. N. HUBBARD, M. D. F. G. MANDELBAUM, M. D. JOHN S. THACHER, M. D.

EDWARD J. WARE, M. D.

Instructors: WILLIAM C. RIVES, M. D.

J. H. TYNDALL, M. D.

H. ALTSHAL.

Assistants: H. W. WOOTEN, M. D.

TULLY, M. D. B. GILBERT, M. D.

W. E. S. PRESTON, M. D.

J. EUGENE KINNEY, M. D.

C. L. ALLEN, M. D.

F. B. LAWSON, M. D.

M. A. MOSES, M. D.

In order to secure a more thorough understanding of the clinical features of the cases presented, the course in the department of Professor Page, given on Mondays and Wednesdays from 2 to 8 P. M., and at the Northwestern Dispensary, Mondays, Wednesdays and Fridays, 9 to 10.45 A. M., will include: 1. Special and minute anatomy of the chest and contents. 2. Chest acoustics. 3. Auscultation and normal respiration and normal heart-sounds. 4. Abnormal respiration and abnormal heart-sounds, rhythm and movements, and their interpretation. 5. Râles, rhonchi, and their significance. 6. Heart-murmurs as evidence of organic disease and functional derangements. 7. Inspection, palpation, percussion and auscultation—diagnosis, prognosis, treatment.

At the same hour on Tuesdays and Saturdays, from 2 to 8 P. M., in addition to the above, Professor Heineman will present cases, demonstrating all the typical functional and organic lesions in the range of general medicine. Special attention will be given to the development of individual cases clinically, and to systematic instruction in symptomatology, methods of physical exploration, differential diagnosis and therapeutics. Sections of the class will accompany Professor Heineman in the examination and treatment of cases in the wards of Mt. Sinai Hospital.

On Thursdays, at 2 P. M., Dr. Thacher will give special instruction in diseases of the abdominal organs and the blood.

DISEASES OF CHILDREN.

Professors: L. EMMET HOLT, M. D.

AUGUST SEIBERT, M. D.

Lecturers: DILLON BROWN, M. D.

F. M. CRANDALL, M. D.

W. F. MARTIN, M. D.

Instructors: G. W. RACHEL, M. D.

Assistants: THOS. S. SOUTHWORTH, M. D. M. GROSS, M. D. CHARLES BARTELS, M. D. KATE L. STERLING, M. D.

T. A. SOUTHWAITE, M. D. ELIZABETH T. ROBBINS, CHAS. BARTELS. ADOLPH BARON. YARNELL.

Professors Holt and Seibert will hold a daily clinic from 10 to 11 A. M., at which the diseases of infancy and childhood will be fully illustrated. Nearly 200 children are treated in this clinic during the year. Special lectures will be given upon the subjects of infant feeding, pneumonia, the intestinal diseases and diphtheria.

In addition to the rich supply of clinical material, the lectures are illustrated by the demonstration before the class of pathological specimens from the different institutions with which the members of this department are connected; that the student may not only be familiar with the clinical symptoms, but with the pathological conditions upon which they depend. This instruction is made a special feature of this department.

Courses on intubation are given to such students as may desire practice upon the cadaver by Dr. Dillon Brown.

DERMATOLOGY.

Professors: A. R. ROBINSON, M. D.

EDWARD B. BRONSON, M. D.

Lecturers: J. A. FORDYCE, M. D.

F. H. DILLINGHAM, M. D.

Assistants: L. F. KEIFER, M. D.

J. A. R. ROBINSON, M. D.

G. S. LINDE, M. D.

COUDERT.

Four clinical lectures a week will be given by the professors in this department during the regular session, and will be continued during the summer by the lecturers or instructors.

Particular attention is given to the diagnosis and treatment of the various skin diseases, including cutaneous cancers, and to this end there is always an abundant supply of clinical material. In addition to the material at the college the class will receive instruction in venereal disease from Prof. Bronson, at Charity Hospital, where there is the largest venereal service in this country, and in cancer from Prof. Robinson, at the Cancer Hospital.

OPHTHALMOLOGY.

<i>Professors:</i>	EMIL GRUENING, M. D.	DAVID WEBSTER, M. D.	T. R. POOLEY, M. D.
<i>Lecturers:</i>	ALFRED N. STROUSE, M. D.	CARL KOLLER, M. D.	NEIL J. HEPBURN, M. D.
	J. HERBERT CLAIBORNE, M. D.	JUSTIN L. BARNES, M. D.	WM. B. MARPLE, M. D.

<i>Instructors:</i>	F. W. RING, M. D.	M. F. CROWLEY, M. D.	G. F. CAREY, M. D.	GEO. W. CALDWELL, M. D.	J. E. GILES, M. D.
	H. E. STAFFORD, M. D.	CHAS. R. JACKSON, M. D.	M. L. FOSTER, M. D.	Alice Wakefield, M. D.	

Professors Gruening, Webster and Pooley, or their assistants, will hold a daily clinic at the Polyclinic, from 9-10 A. M., and 2-3 P. M. Dr. Carl Koller will occupy the hour from 2-3 on Tuesdays and Thursdays. The diagnosis and treatment of diseases and injuries to the eye will be taught, including the use of the Ophthalmoscope, the adjustment of glasses and surgical operations.

Members of this class will also be permitted to attend the operations of Professor Webster at the Manhattan Eye and Ear Hospital, those of Professor Gruening at the N. Y. Eye and Ear Infirmary and at Mt. Sinai Hospital, and those of Prof. Pooley at the New Amsterdam Eye and Ear Infirmary.

LARYNGOLOGY AND RHINOLOGY.

<i>Professors:</i>	D. BRYSON DELAVAN, M. D.	JOSEPH WILLIAM GLEITSMANN, M. D.	
<i>Lecturers:</i>	FRANCIS J. QUINLAN, M. D.	ROBERT C. MYLES, M. D.	RICHARDS, M. D.
<i>Instructors:</i>	S. M. PAYNE, M. D.	G. A. RICHARDS, M. D.	
<i>Assistants:</i>	B. W. McNICHOL, M. D.	P. V. BURNETT, M. D.	J. B. HALLWOOD, M. D.
	H. M. PAINTER, M. D.	W. F. MORRISON, M. D.	HENRY D. WHITE, M. D.
	GEO. W. CALDWELL, M. D.	ALBERT G. WEED, M. D.	T. W. ERDMAN, M. D.

On four days of each week, from 4-5 P. M., there will be demonstrations of the latest methods of inspection, diagnosis and treatment of the diseases of the nose, mouth, pharynx and larynx. The members of the class will be familiarized with the instruments of precision appertaining to this department.

Dr. George A. Richards will conduct two evening clinics a week: Wednesdays and Fridays, from 8-9 P. M.

Dr. Robert C. Myles will give a series of demonstrations of the naso-pharynx upon the cadaver. There is no extra charge for this course.

OTOLOGY.

<i>Professor:</i>	OREN D. POMEROY, M. D.	MATTHIAS L. FOSTER, M. D.	FRANKLIN SOPER, M. D.
<i>Lecturers:</i>	J. O. TANSLEY, M. D.	B. W. McNICHOL, M. D.	
<i>Instructors:</i>	E. P. HOOVER, M. D.	D. M. WOOLLY, M. D.	J. A. BLAKE, M. D.
<i>Assistants:</i>	J. B. HALLWOOD, M. D.	E. FRITZ, M. D.	J. H. MORRISON, M. D.
	H. E. STAFFORD, M. D.		

The department of Otology has been extended so as to embrace four clinics a week. Mondays and Thursday from 4-5 P. M., and Tuesdays and Saturdays from 8-9 P. M. All the clinical material in the Manhattan Eye and Ear Hospital on Mondays, Wednesdays and Fridays has been turned over to the Polyclinic, in addition to the material at the Polyclinic Building. The diagnosis and treatment of ear diseases in general is taught by the exhibition of cases. Operations are performed both at the Polyclinic and at the Manhattan Eye and Ear Hospital, and the technique of Otology is thoroughly illustrated by practical work. Dr. Pomeroy's clinics at the Manhattan are placed at the service of the class.

DISEASES OF THE MIND AND NERVOUS SYSTEM.

<i>Professors:</i>	LANDON CARTER GRAY, M. D.	B. SACHE, M. D.	
<i>Lecturers:</i>	W. B. PRITCHARD, M. D.	CHRISTIAN HERTER, M. D.	ROBT. S. NEWTON, M. D.
<i>Instructors:</i>	E. G. MASON, M. D.	S. T. ARMSTRONG, M. D.	A. WIENER, M. D.
	R. C. SHULTZ, M. D.	L. J. MORTON, M. D.	

<i>Assistants:</i>	F. T. METCALF, M. D.	J. T. KEVIN, M. D.	T. E. BOWMAN, M. D.
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Professor Gray's course will be one of systematic demonstration of the clinical features of the diseases of the mind and nervous system, on Monday, Wednesday and Friday of each week from 1-2 P. M., as well as of special instruction in the mechanism and application of electrical and other apparatus used in the diagnosis and treatment of diseases of the nervous system.

Professor Sachs will, in the course of his clinical lectures, cover the entire field of cerebral, spinal and peripheral nerve diseases, keeping in view the needs of the advanced general practitioner. He will also give a course of lectures on insanity (with exhibition of patients) at regular intervals during the session.

Dr. C. A. Herter will give a regular series of lectures on the Anatomy and Pathology of the Nervous System, with special reference to diagnosis. These lectures will be fully illustrated by means of dissections, preparations, models, microscopic specimens and charts.

Dr. Herter will also receive at his laboratory, students wishing to do special work upon the Anatomy and Pathology of the Nervous system.

Dr. A. Wiener will give systematic instruction in Medical Electricity.

OBSTETRICS.

<i>Professor:</i>	EDWARD A. AYERS, M. D.
<i>Instructors:</i>	JULIUS ROSENBERG, M. D.
<i>Assistants:</i>	ADOLPH BARON, M. D.

T. J. MCGILLICuddy, M. D.	BARTLETT GILBERT, M. D.	BENJ. WOLF STIEFEL, M. D.
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Clinical demonstrations are given to members of the class by Professor Ayers illustrating practically the management of deliveries, including the use of Barnes' dilators and forceps. Opportunity is afforded for practicing abdominal palpation for the diagnosis of fetal position, with demonstrations of external version where needed for the prevention of mal-positions. A large out-door obstetrical service will afford physicians opportunity for attending confinements.

The management of difficult presentations, and the recent improvements in major obstetric operations, will be illustrated, and the most approved methods of treating the diseases of pregnancy will be discussed.

GYNECOLOGICAL CLINICS.

HOURS OF ATTENDANCE.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
9-10 a. m.	Prof. Sims.	Prof. Wylie.	Prof. Coe.	Prof. Sims.	Prof. Wylie.	Dr. Wells.
3-4 p. m.	Prof. Mundé.	Dr. R. Wylie.	Dr. Collyer.	Prof. Mundé.	Prof. Coe.	Dr. Porter.
4-5 p. m.		Dr. Goffee.			Dr. Goffee.	
7-8 p. m.					Dr. Jarman.	

Wednesday, at 3 p. m., Prof. Mundé will operate at Mt. Sinai Hospital.

Prof. Coe operates at the Woman's and Cancer Hospital on Wednesday.

Dr. Goffe will operate at Randall's Island Hospital, Mondays, at 2 o'clock.

Members of the class are admitted to the Woman's Hospital by special ticket.

Thursday, at 3 p. m., Prof. Wylie will operate at Bellevue Hospital.

Prof. Sims operates at St. Elizabeth Hospital one or two days a week.

SURGICAL CLINICS.

9-10 a. m.	Dr. Van Arsdale.		Dr. Milliken, <i>Hernia.</i>	Dr. Van Arsdale.		Dr. Milliken, <i>Hernia.</i>
11-12 a. m.	Prof. Wyeth.	Prof. Gerster.	Prof. Gibney.	Prof. Wyeth.	Prof. Gerster.	Prof. Gibney.
2-3 p. m.	Dr. Lillenthal.	Dr. Cramer.	Dr. Nordeman, <i>Genito-Urinary.</i>	Dr. Cramer.	Dr. Lillenthal.	Prof. Nordeman, <i>Genito-Urinary.</i>
7-8 p. m.		Dr. J. P. Tuttle. <i>Diseases of the Rectum.</i>	Dr. Van Arsdale, <i>Aseptic and Anti- septic Surgery.</i>		Dr. J. P. Tuttle.	

Until February of each session, Profs. Wyeth and Gerster will operate on or from two to four days of each week in the Mt. Sinai Hospital.

Prof. Gibney operates at the Hospital for Ruptured and Crippled at 3:30 A. M., on Tuesdays and Fridays.

After February Prof. Gerster will operate at the German Hospital.

After February, Prof. Wyeth will operate at the Polyclinic Hospital.

Operative Surgery on Cadaver daily at hours announced by Prof.

Dawbarn.

SPECIAL COURSE IN GENITO-URINARY SURGERY.

4-5 p. m.		Prof. Fluhrer.			Prof. Fluhrer.	
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EYE CLINICS.

HOURS OF ATTENDANCE.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
9-10 a. m.	Dr. Barnes.	Prof. Pooley.	Dr. Claiborne.	Prof. Pooley.	Dr. Ring.	Dr. Claiborne.
2-3 p. m.	Prof. Gruening or Dr. Strouse.	Dr. Koller.	Dr. Payne.	Dr. Koller.	Prof. Gruening or Dr. Strouse.	Prof. Webster.

OPERATIONS.

By Prof. Gruening, at Mt. Sinai Hospital, Thursdays at 3 P. M. By Prof. Pooley, at New Amsterdam Eye and Ear Hospital, daily at 2 P. M.

By Prof. Webster, at Manhattan Eye and Ear Hospital, Mondays, Wednesdays and Fridays at 3:15 P. M.

PRACTICE WITH THE OPHTHALMOSCOPE.

Wednesdays and Saturdays at 3-4 P. M., at Polyclinic, Dr. Stafford. Wednesdays at 7-8 P. M., at the Manhattan Eye and Ear Hospital, Fridays at 3-4 P. M., at Polyclinic, Dr. Strouse. by Dr. Ring.

Saturdays at 7-8 P. M., at the Manhattan Eye and Ear Hospital, by Dr. Hepburn.

THROAT, NOSE AND EAR CLINICS.

4-5 p. m.	Prof. Pomeroy, <i>Ear Clinic.</i>	Prof. Delavan. <i>Throat and Nose.</i>	Prof. Gleitsmann, <i>Throat and Nose.</i>	Prof. Pomeroy, <i>Ear Clinic.</i>	Prof. Delavan, <i>Throat and Nose.</i>	Prof. Gleitsmann. <i>Throat and Nose.</i>
7-8 p. m.						Dr. Foster. <i>Ear Clinic</i>
8-9 a. m.	Dr. Myles. <i>Throat and Nose.</i>	Dr. Tansley, <i>Ear Clinic.</i>	Dr. Richards, <i>Throat and Nose.</i>	Dr. Myles, <i>Throat and Nose.</i>	Dr. Richards. <i>Throat and Nose.</i>	Dr. Myles.

Prof. Pomeroy will operate every Wednesday at 3:15 P. M., at the Manhattan Eye and Ear Hospital.

Dr. Myles will demonstrate the Anatomy of the Throat and Nose, Saturday evenings, at 8 o'clock.

PATHOLOGY, BACTERIOLOGY AND CLINICAL MICROSCOPY.*

8-12 p. m.	Dr. Thacher. Dr. G. A. Tuttle.	Dr. Beach. Dr. Tuttle.	Dr. Thacher. Dr. Tuttle.	Dr. Beach. Dr. Tuttle.	Dr. Thacher. Dr. Tuttle.	Dr. Beach. Dr. Tuttle.
8.30-10 p. m.	Dr. Beach.	Dr. Beach.		Dr. Beach.	Dr. Beach.	

*Members of the class can select for study in the Laboratory any hour between 8 A. M. and 12 M.

Laboratory closed from August 1 to September 15.

STATE, TERRITORY OR COUNTRY.

Alabama.....	20	Kentucky.....	24	Texas.....	30
Arkansas.....	4	Louisiana.....	8	U. S. Navy.....	2
Bermuda.....	1	Maine.....	3	Virginia.....	8
California.....	2	Massachusetts.....	6	Vermont.....	1
Canada.....	25	Michigan.....	7	Washington.....	4
Central America.....	1	Minnesota.....	8	Wisconsin.....	7
China.....	1	Mississippi.....	10	West Virginia.....	7
Colorado.....	2	Missouri.....	26		
Connecticut.....	10	Montana.....	2	Total.....	468
D. C.	4	Nebraska.....	10	Total 1882-8.....	161
Dakota, North.....	2	North Carolina.....	19	" 1883-4.....	182
Dakota, South.....	1	New Hampshire.....	8	" 1884-5.....	239
Florida.....	2	New Jersey.....	6	" 1885-6.....	240
Georgia.....	26	New Mexico.....	1	" 1886-7.....	301
Indiana.....	15	New York.....	66	" 1887-8.....	387
Indian Territory.....	6	Oregon.....	8	" 1888-9.....	388
Illinois.....	12	Ohio.....	21	" 1889-90.....	422
Iowa.....	7	Pennsylvania.....	16	" 1890-91.....	468
Italy.....	1	Rhode Island.....	2	Total number from the opening of the school.....	3,718
Japan.....	1	South Carolina.....	7		
Kansas.....	1	Tennessee.....	22		

GENERAL ORDER OF CLINICS—WINTER SESSION, 1891-92.

HOURS OF ATTENDANCE.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
8-12 a. m.	Pathology* and Bacteriology.	Dr. Thacher. Dr. Tuttle.	Dr. Beach. Dr. Tuttle.	Dr. Thacher. Dr. Tuttle.	Dr. Thacher. Dr. Tuttle.	Dr. Beach. Dr. Tuttle.
9-10 a. m.	Gynecology. Diseases of the Eye.	Prof. Sims. Dr. Barnes.	Prof. Wyllie. Prof. Pooley.	Prof. Coe. Dr. Claiborne.	Prof. Sims. Prof. Pooley.	Prof. Wyllie. Dr. Claiborne.
9-10 a. m.	Surgery.	Dr. Van Arsdale		Dr. Milliken, (Hernia).	Dr. Van Arsdale	Dr. Milliken. (Hernia).
10-11 a. m.	Diseases of Children.	Prof. Seibert.	Prof. Holt.	Prof. Selbert.	Prof. Seibert.	Prof. Holt.
11-12 a. m.	General and Orthopedic Surgery.	Prof. Wyeth.	Prof. Gerster.	Prof. Gibney.	Prof. Gerster.	Prof. Gibney.
1-2 p. m.	Diseases of the Skin. Diseases of the Mind and Nerves.	Prof. Bronson. Prof. Gray.	Prof. Robinson. Prof. Sachs.		Prof. Bronson. Prof. Gray.	Prof. Robinson Prof. Sachs.
2-3 p. m.	Surgery.	Dr. Lillenthal.	Dr. Cramer.	Dr. Nordeman, Genito-Urinary	Dr. Lillenthal.	Dr. Nordeman. Genito-Urinary
2-3 p. m.	Diseases of the Chest and General Medicine	Prof. Page.	Prof. Heineman	Prof. Page.	Dr. Le Fevre.	Prof. Heineman
	Diseases of the Eye.	Prof. Gruening.	Dr. Koller.	Dr. Payne.	Prof. Gruening.	Prof. Webster.
3-4 p. m.	Gynecology. Ophthalmoscopy.	Prof. Munde.	Dr. R. Wyly.	Dr. Collyer.	Prof. Munde.	Dr. Porter.
	Diseases of the Throat, Nose and Ear.	Prof. Pomeroy. Ear Clinic.	Prof. Delavan, Throat & Nose.	Prof. Gleitmann, Throat & Nose.	Prof. Pomeroy. Ear Clinic.	Dr. Stafford.
4-5 p. m.	Genito-Urinary Surgery. Gynecology.	Genito-Urinary Surgery.	Prof. Fluhrer.	Prof. Delavan, Throat & Nose.	Prof. Fluhrer.	Prof. Gleitmann, Throat & Nose.
	Obstetrics.	Prof. Ayers.	Dr. Goffe.		Dr. Goffe.	
	Surgery.		Dr. J. P. Tuttle Diseases of Rectum.	Dr. Van Arsdale	Dr. J. P. Tuttle	Dr. Jarmin.
7-8 p. m.	Operative Gynecology.					Dr. Foster. Ear Clinic.
	Throat, Nose and Ear.					
8-9 p. m.	Throat, Nose and Ear.	Dr. Myles. Throat & Nose.	Dr. Tanaley. Ear Clinic.	Dr. Richards. Throat & Nose.	Dr. Myles. Throat & Nose.	Dr. Myles.
	Fractures and Bandaging.		Dr. Armstrong. Dr. Kelley.		Dr. Armstrong. Dr. Kelley.	
8.30-10 p. m.	Clinical Microscopy.	Dr. Beach.	Dr. Beach.		Dr. Beach.	Dr. Beach.

Wednesday, at 2.30 p. m., Prof. Munde will operate at Mt. Sinai Hospital, and Prof. Coe at the New York Cancer Hospital.

Thursday, at 3 p. m., Prof. Wyly will operate at Bellevue Hospital.

Until February of each Session, Professors Wyeth and Gerster will operate on from two to four days of each week in the Mt. Sinai Hospital. After February, Prof. Gerster operates at the German Hospital.

Mondays, Wednesdays and Fridays, at 3.15 p. m., Prof. Webster will operate at the Manhattan Eye and Ear Hospital.

Friday, at 1 p. m., Dr. Van Arsdale will hold a Surgical Clinic at the Eastern Dispensary, corner Essex and Grand Streets.

Prof. Pooley will hold a Clinic, daily, at 2 p. m., at the New Amsterdam Eye and Ear Hospital.

*Members of the class can select for study in Laboratory any hour between 8 a. m. and 12 m.

Dr. Ring holds a Clinic at the Manhattan Eye and Ear Hospital, every Wednesday evening, at 7.30 p. m., and Dr. Hepburn at the same Hospital, every Saturday evening at 7.30 p. m., will devote one hour to practice with the Ophthalmoscope.

Wednesdays, at 3.15 p. m., Prof. Pomeroy will operate at the Manhattan Eye and Ear Hospital.

Thursday, 3 p. m., Prof. Gruening, will operate at Mt. Sinai Hospital.

N. B.—Members of the Class are earnestly requested to be present in the Clinic Room promptly at the hour, and to withdraw to the next Clinic immediately after the sounding of the gong.

Special Operations will be announced on the Bulletin in the Reading-Room.

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To whom all communications intended for the Editor, original contributions, exchanges, books for review, as well as communications relating to the business of the Journal, should be addressed.

To Contributors and Correspondents.—Original Articles, Clinical Reports, Correspondence upon subjects of General or Special Interest, News Items, etc., are solicited from members of the profession everywhere.

Authors favoring us with Original Articles should do so with the understanding that they are for exclusive publication in this Journal. Any deviation from this rule must be specially mentioned at the time of sending the manuscript.

Though not required for publication, all communications must contain the author's name and address, otherwise no attention will be paid to them.

Editorial Department.

NEW YORK, AUGUST, 1892.

THE PROGNOSIS OF GUNSHOT WOUNDS OF THE ABDOMEN.

From a medico-legal point of view the prognosis of this class of injuries is of great importance. Cases are not rare in which even surgeons of acknowledged ability have been held responsible for the unfavorable outcome of abdominal traumatisms, which, of themselves, were necessarily fatal. It is therefore of interest to review, briefly, the conclusions reached by Dr. P. Seliger, who has most carefully and exhaustively investigated this subject (*Prager Medicinische Wochenschrift*). According to his statistics, gunshot wounds of the anterior abdominal wall are four times as frequent as those of the posterior, and have a mortality of 54 per cent., and if complicated by injuries of the bones, of 78 per cent. Cases where the pleural cavity was perforated were always fatal even if the lung escaped injury. In the fatal cases death usually occurred within the first two weeks and was attributable to hemorrhage, peritonitis, or septicaemia. It may happen that the bullet perforates the abdominal cavity without injuring the intestines, but usually protrusion of the gut occurs which renders the prognosis worse. Gunshot wounds of the omentum may terminate fatally

from hemorrhage, but otherwise the prognosis is good. Wounds of the stomach are usually fatal, and the same applies to wounds of the duodenum. An actual complete cure in cases of gunshot wounds of the small intestines is very rare, while among wounds of the large intestine those of the descending colon and sigmoid flexure are seldom fatal, and those of transverse colon give the worst prognosis. Recovery in these cases is rendered tedious by the formation of fistulae, adhesions and abnormal communications, especially in gunshot wounds of the rectum. A marked contrast exists in the prognosis of intra- and extra-peritoneal gunshot wounds of the bladder, the former being uniformly fatal, while the latter give a mortality of only fifteen per cent. Gunshot wounds of the kidneys are attended with a death rate of forty-four per cent., but even in favorable cases persistent renal fistulae and chronic inflammation of the parenchyma are frequently left behind. In gunshot wounds of the liver complications with injuries of other viscera are frequent. The mortality as computed from the author's statistics is 26.8 per cent.; according to others 39 per cent. The most frequent sequelae are biliary fistulae, although abscesses have been noted. Wounds of the spleen are also frequently complicated by injuries of neighboring organs. The diagnosis is often very difficult and the mortality amounts to 65 per cent. Wounds of the substance of the spinal cord in the lumbar region result fatally, but a more favorable prognosis can be given in cases of effusion of blood into the spinal canal and injuries of the vertebrae. In gunshot wounds of the genitals the prognosis, *quoad vitam*, is good, but these injuries deserve careful attention from a medico-legal point of view because of their sequelæ, urethral fistulae, strictures, deformities, etc. Dr. Seliger's studies have convinced him that in gunshot wounds of the large blood-vessels of the abdominal cavity a cure can rarely be obtained without surgical interference. The hemorrhage may be directly due to the projectile, or indirectly to the action of torn off fragments of bone, or at a later stage to erosion of the vascular walls from disease engendered by the injury. The mortality of wounds of the pelvic bones is also very high, death sometimes occurring at a late period, in consequence of exhaustion or amyloid degeneration resulting from protracted suppuration.

Original Articles.

OSTEO-MYELITIS.*

BY CHARLES G. R. JENNINGS, A.B., M.D.,
ELMIRA, N. Y.

A disease which, commencing with an apparently trivial injury, as for example, a blow upon the leg above the knee, may develop so rapidly and with such direful consequences, that in four months the victim must either suffer amputation of his limb or lose his life, is a reality that demands earnest study of all who may be called upon to treat it. Having recently attended such a case, I wish to place before you for discussion the principal features of the disease, and then narrate the case which suggested my subject.

Inflammation of the medullary tissue of bone, occurs most frequently in childhood before the time of puberty. It is also seen in the cachectic and scrofulous subject. Its favorite seat is in the long bones of the lower extremity, and it is often found in the lower end of the femur or the upper end of the tibia. It is caused by a constitutional condition, and its outbreak may be determined by an injury, which may or may not be severe, or there may be no injury at all and no apparent local cause for the disease. The constitutional condition which favors the occurrence of osteo-myelitis, is now by many recognized to be the presence of pyogenic micro-organisms in the blood of the patient. How they get there and whence they come, is not known, but that they are capable of producing suppurative inflammation, either with or without the aid of local traumatism, has I believe, been clearly proven. In all forms of phlegmonous or suppurative inflammation, the presence of these micro-organisms may be demonstrated, and it is very generally believed that they stand in a causative relation to the process of suppuration.

Boils, carbuncles, sub-fascial phlegmons, sub-periosteal and endosteal phlegmonous inflammations may, with very good authority, all be regarded as belonging in the same class of inflammations, namely, those brought about by the growth in the tissues of some variety of pus producing micro-organism called staphylococcus. But I do not wish to dwell upon this theory nor to provoke discussion upon the microbial origin of infectious diseases. My object is to place this form of suppurative bone inflammation in the class of phlegmonous inflammations above mentioned.

All of these forms of phlegmon produce severe constitutional effects, and none more so than bone phlegmon. The reason for the latter assertion is

obvious; in bone phlegmon we have a dense unyielding shell of compact bone surrounding the inflamed spongy tissue, so that as the products of inflammation are forced out into the bone spaces, the intra-osseous tension increases, pari passu with the exudation. It is this tension which contributes largely to the mischief done by the disease. Pressure forces the infected serum and liquefied bone tissue into the lymphatics and blood stream. Systemic toxæmia is the rapid consequence. This poisoning of the system may be so intense as to lead quickly to death. If not, then the sufferer has to struggle with septicaemia or pyæmia. The tension within the bony walls produces other effects besides forcing the poison into the circulation. It may lead to strangulation of the nutrient artery, and thus by choking off the blood supply cause necrosis. If necrosis does not ensue we still find, what is just as bad, an extensive destruction of bone by the same tension. The lime salts become dissolved in the serum and soon the outer shell of bone is filled with a mass of semi-liquid infectious detritus. Sometimes, the compact substance is invaded and the periosteum may be stripped off from the bone by the burrowing of inflammatory exudation, or the periosteum may become inflamed by contiguity and will then show to the examining touch more or less marked thickening. In one or more places the compact tissue may be undermined and destroyed and the presence of pus burrowing from within or its way through the soft parts to the surface, following the path of least resistance, urged onward by the *vis a tergo*, the tension above spoken of, will ere long be recognized by localized hardness and swelling of the flesh. The neighboring joint may become invaded.

Osteo-myelitis is a disease, therefore, which exhibits a much graver tendency than other phlegmons, because of its anatomical condition. Without surgical interference it makes terrible havoc and I may say leads almost surely to death.

As to treatment, I shall not have to trespass long upon your attention. The treatment is to relieve the tension, remove the dead products of inflammatory action, establish drainage for future trouble, leave the inflamed parts clean—aseptically clean if possible—and help nature do the rest. There is only one way to relieve the tension, and that is to cut down over the inflamed bone and make abundant opening through the compact tissue. When should this be done? As soon as the diagnosis of osteo-myelitis is established. I will not take your time to rehearse the details of the operative procedure, but will at once relate a case which well illustrates what this disease can do, and also gives no uncertain warning against delay in surgical treatment.

*Read before the Chemung County Medical Society, at Elmira, N. Y., March, 1888.

On the 23d of last October, I was called in consultation to see Charlie L., aged 13, of German parentage, good family history, and no evidence of syphilis, struma or other constitutional taint, unless in the case of one sister from whom I had removed enlarged tonsils. The boy received a slight injury to the lower extremity of the left thigh, some two weeks before I saw him. The thigh swelled rapidly, the lymphatics were engorged and inflamed and very tender; there was exquisite tenderness elicited by firm pressure upon the bone, and there was severe constitutional disturbance, chills and sweating and a daily rise in temperature to 104° or 105°. The periosteum was not thickened at any point where I could feel it. There was no deformity indicating fracture, no crepitus on motion, no shortening by measurement. The swelling was greatest two inches above the knee, and was fusiform in shape, extending four or five inches upward and as far as the patella downward. The patella did not float, the motions of the joint were not restrained except by the swelling around the tendons above. The joint did not appear to share in the trouble. There was a well marked erysipelatous flush of the skin over the lower half of the thigh. This erysipelatous flush taken with the lymphadenitis and the œdema of the soft parts confused the diagnosis by thrusting before our eyes the unmistakable evidences of phlegmonous erysipelas. Fortunately I was not misled by this, but felt convinced that the seat of the difficulty was in the bone, and if so we had a grave form of bone inflammation to deal with. I advised exploratory incision and trephining of the bone, in search of the mischief; but the parents would not consent and I did not see the case again for two weeks. By that time the general disturbance was somewhat relieved. A rational explanation of this would be that the compact outer wall of bone had given way, thereby relieving the tension. The parents were again urged to consent to operation, but refused. However, the leg was kept in a splint, the boy in bed, and the hypophosphites and cod liver oil were administered. He was very weak all this time, his pulse running to 120 or higher. His appetite, however, did not fail. Subsequently the attending physician removed from the city and the case came into my hands.

On Feb. 18th, the disease had extended more than half way up the shaft, and in one place above the middle the bone had given way, so that there was a well marked angular deformity. The parents now consented to operation.

On Feb. 21st, with the assistance of Drs. Williamson and Soble, of this city, I did the following operation: Wishing to lose as little blood as possible, for the boy was weak, and a careful examination of the

bone would require a bloodless field, and yet not daring to apply the Esmarch bandage lest infectious material might be forced into the general circulation, I elevated the leg a few minutes and then adjusted the elastic band at the level of the groin. Most painstaking attention was given to antisepsis, and asepsis too, for that matter. The incision was made on the outer side of the thigh, because the bone is there more superficial and the field of operation less vascular. The incision began well above the upper limit of disease and extended downward to a point above where I had a right to expect the capsule of the knee joint would reach. You see I was still not without hope that something might be done to save the leg, and so I wished to avoid opening the knee. When the bone was exposed, however, we found the following hopeless condition of things: The periosteum was dissected from over a large part of the bone within reach. The bone was completely undermined transversely at the junction of middle and upper third, giving the fracture above mentioned. The periosteum was rough for an inch above this point, and the probe found softened bone for the same distance upward on the interior. The lower two-thirds of the shaft was split longitudinally for four inches and the two split fragments were separated by three-quarters of an inch. The examining finger passed downward through a recent rent directly into the cavity of the knee joint. To the inner side of the femur, among the muscles of the thigh, was a collection of more than a pint of dirty pus. [This was well recognized long before the day of operation, but I could not get consent to tapping and, in fact, did not see much to be gained by tapping it without a more radical operation]. Having hastily made this examination, I at once amputated about three inches from the hip going above the carious bone.

Subsequent inspection of the amputated leg showed that the disease began at the level of the lower epiphysis. The boy is now doing well and bids fair to recover. In my opinion the leg might have been saved by an early operation, but in this case, as we so often find, the parents and relatives make up a complication fully as insurmountable as the disease itself.

THE CAUSES AND TREATMENT OF SINUSES RESULTING FROM ABDOMINAL SECTION.*

BY ANDREW F. CURRIER, M.D., NEW YORK.

One of the most impressive and important facts in connection with the history of morbid conditions in animal life is the constant effort of nature to protect

* Abstract of paper read before the Section of Obstetrics and Gynecology, at the meeting of the American Medical Association, held in Detroit, Mich., June 7-10, 1892.

the body from the results of injury. Whether the injury be mechanical or chemical this conservative and salutary influence is ever present, ever alert to repair existing damage, to anticipate that which may be. The ancients recognized this influence under the term *vis medicatrix naturæ*, but could give no satisfactory explanation of it. Modern pathological anatomy and chemistry have analyzed it, and the result is pathological science as we understand it today. The debt which the world owes to Virchow, Cohnheim, Lister, Koch, Pasteur and others, most of them our contemporaries, for their patient and profound labors in this field of inquiry is beyond estimation. The wonderful processes which they have explained are suggestive of something more than the so-called "blind processes of nature," they speak to us of law working by intelligence.

The author proposed as the basis thought of his paper, the case of a young Irish woman in the practice of a friend, who had been operated upon for tubercular peritonitis, the abdominal wound having been left open for drainage. The parietal surface of the peritoneum remained free, while a wall of new tissue gradually formed over the intestines and omentum completely isolating them from the parietal peritoneum. The bladder, uterus, and appendages were in the great sinus which had thus been formed between the layer of new tissue and the abdominal wall. The new tissue was friable, not very vascular, showed little tendency to contract, and was adherent to the parietal peritoneum only at its extreme limits in the flanks. It secreted freely, like other secreting membranes. Here was an example on a colossal scale of the sinuses which are of such common occurrence after the performance of abdominal section. The author had found but little evidence in gynaecological literature that this subject had received careful investigation. The object of such sinuses might be regarded as a conservative action on the part of the peritoneum. It was the same process which resulted in the formation of bands and adhesions in all portions of the abdominal and pelvic cavities. The new tissue which was formed was of low organization, and if it contracted might not contract sufficiently to obliterate the lumen of the cavity when a distinct lumen was formed. Retrograde metamorphosis and absorption were also incomplete, and the result was a persistent opening with an annoying discharge of purulent material.

The causes of this condition were considered as constitutional, irritative and septic.

Constitutional or predisposing causes existed in cases in which the peritoneum had a habit, as it were, of throwing out excessive secretion. This was observed in cases of peritoneal tuberculosis, syphilis, malignant disease of the peritoneum, or disease of

any of the abdominal viscera in which the visceral or peritoneal circulation was seriously interfered with. There was a predisposing condition in cases in which an abundance of peritoneal adhesions was found as the result of any inflammatory process. Irritative causes might be mechanical or septic, but in the latter variety the irritation might be chemical as well as mechanical. Glass drainage tubes were chief among irritative agents, especially when very large and used too long a time. In some cases they were certain to cause much irritation however properly employed. The intestines and omentum snugly embraced them, exudation resulted, in a short time a mould of the tube was formed, and the intestines became agglutinated to the tube and to each other. When the drainage tube was removed the concentric pressure of the surrounding structures upon the walls of the sinus, might cause them to collapse and disintegration and absorption might follow, but in many cases such a fortunate result did not occur and the sinus would continue to granulate and discharge indefinitely.

Sinuses might be caused by the irritation of too many or too large ligatures or sutures, or by loosened ligatures around tissues which had shrunk or atrophied. The process might be an aseptic one as had been shown by Bumm. Sinuses of this character might lack the well-marked wall which was often present when a drainage tube had been used. They might be marked principally by the agglutination of coils of intestine, with a more or less abundant protective covering of exudate. They might be long, irregular and intricate and might contain pockets of considerable capacity. The irritating effect of ligatures was observed by the earlier ovariotomists and some of them endeavored to do without them. Thus Keith used the actual cautery as far as possible in place of the ligature, and Peaslee cut and removed the pedicle ligatures as soon as the danger of haemorrhage had passed.

Gauze, as a means of drainage within the abdominal cavity was probably less irritating than tubes of glass, rubber, bone or other firm material. Not a few surgeons had adopted it with satisfaction to the exclusion of other means.

Sepsis as a cause of sinuses was, as yet, too obscure a subject to admit of careful and exact statements. Sinusessometimesoccurred when no drainage had been employed. The ligatures might have been aseptic, but there might have been blood pus, serum or necrotic tissue as a focus of irritation, or poisonous material might have been introduced from without, and the peritoneum have been unable to absorb or successfully isolate it. Clinical investigations had thus far played a more important part than experimental in the attention that had been bestowed upon this

subject. The results of this condition were very annoying and often deleterious. The function of the intestines might be interfered with, and there was always the danger which results to vital organs from prolonged suppuration. Not unusual consequences were fistulae of the bladder and intestines, vesical irritation, nephritis, anaemia and intensification of pre-existing tubercular or syphilitic disease. The beneficial effect of the primary operation was lost in the intensity of the new condition which had been introduced. Exploration of the sinuses was often difficult on account of their extent and the danger of penetrating the intestines or the peritoneum. The alternatives of treatment were expectancy, palliative, or radical measures. Expectancy meant doing nothing, which, though the method of despair, was very often followed by a spontaneous cure. Especially was this the case if the general nutrition could be maintained. Palliative measures were numerous and of varying utility. Thorough cleanliness was a pre-requisite, but was often difficult to maintain if the sinuses were long and irregular. Various antiseptic solutions were useful for irrigation including carbolic acid, creolin and that of Thiersch. It was believed that they were more efficient if used hot. The abdominal opening should be large enough to permit free exit of discharges. Applications of nitrate of silver and trypsin had been used with advantage. The latter would digest the cicatricial tissue, but it would also effect an opening into the intestine or bladder unless great caution were used. The author had seen both of such accidents from its use. Drainage from abdomen to vagina had proved efficient in some cases, but it would fail in others, as in a case which was narrated.

The removal of an offending pedicle ligature would not always be followed by the healing of the sinus. For obstinate cases there remained only the radical procedure of reopening the abdomen, breaking up adhesions and dissecting away adventitious tissue. This might be an operation of great magnitude, and might also result in failure. With suitable improvements it would probably be the method of treatment of the future.

ABSTRACT OF PAPER ON COMBINED GYNECOLOGICAL OPERATIONS.*

BY GEORGE M. EDEBOHLS, A.M., M.D.,
NEW YORK.

The tendency of modern gynecology is to progress in a surgical direction.

The uncertainties and unreliability of other methods of treatment as compared with the results obtained by surgical measures are proverbial.

With the rapid strides forward of surgical gynecology, this contrast is daily becoming more accentuated.

Increased confidence in results growing from increased experience and progressive skill, will incline the individual operator more and more to trust to surgical resources.

Many cases require more than one gynecological operation to effect a cure.

All gynecological operations required in a given case should at the present day, as a rule, almost without exception, be performed at the same sitting. The patient has a right to expect this from the expert, claiming to possess the highest degree of operative skill. That this will be the standard of the near future the author does not doubt.

Success in combined gynecological operations presupposes first of all perfect asepsis and a not too prolonged anesthesia. The duration of the latter need but very rarely exceed one and a half hours even in the most difficult cases.

Other things necessary are the requisite degree of operative skill and dexterity, sufficient and efficient assistance, a perfected technique of the various operations attempted, and an instrumentarium suitable to rapid work.

The author described his instrumentarium and the technique of the various gynecological operations as practised by him.

Combined gynecological operations may be divided into two general classes:

1. Combinations into which a laparotomy does not enter.

2. Combinations of which a laparotomy forms part.

The expert operator should be able to perform any required combination of operations of the first class within the time limits of safe anesthesia.

The same statement holds good of the combinations of operations of the second class into which a *simple* laparotomy entered. When a *difficult* laparotomy forms part of the combination, the patient's interests may occasionally be better served by operating at two sittings.

Examples of combinations of both classes were given from the author's practice. To cite but one example, the author has a number of times in cases of complete procedentia uteri, performed curettage, amputation of the cervix, anterior colporrhaphy, colpo-perineorrhaphy and ventrofixation of the uterus at one sitting, doing the five operations within seventy-five minutes.

As a result of his experience and success with plastic work, he considers total extirpation of the uterus for prolapsus justifiable only under very exceptional conditions.

There is no excuse for a mortality in combined operations of the first class. The mortality of com-

* Read before the Section on Obstetrics and Diseases of Women, American Medical Association, Detroit, June, 1892.

bination into which a laparotomy entered will depend upon that of the special intra-abdominal operative interference required.

The author concluded his paper with a frank recital of all his failures in combined gynecological operations.

THE TREATMENT OF HÆMORRHOIDS BY CARBOLIC ACID INJECTION.

BY J. W. HALLUM, M.D., CARROLLTON, GA.

The treatment of hemorrhoids by carbolic acid injection is a method that I hesitate to present and advocate before this Association, not because of any of its defects, but on account of its opponents.

To Colles, of Dublin, has been accorded the honor of first treating piles hypodermically, in 1874. Dr. S. H. Sturgeon, of this country, claims that he reported cures by the injection of carbolic acid in the *Medical Brief*, for 1874. There was but little attention given the subject before Dr. W. P. Agnew, of San Francisco, reported his cures by this treatment, in the Toledo *Medical and Surgical Journal* in 1877. In 1880, Dr. Blackwood, of Philadelphia, reported his cures by it in the New York *Medical Record*. Since that time there have been volumes written upon this subject. Therefore I do not expect to introduce anything entirely new, but I do hope that I may be able to interest some of you; at least those of you who have not been making satisfactory cures of this very common disease. Why you have not, I shall not attempt to explain, but describe my mode of proceeding in a country practice, where the office is unhandy and an operating table or chair unknown.

It is not necessary to be a specialist in order to be successful in the treatment of piles by this method. By it "quacks" have succeeded admirably and made inroads on our practice. The radical cure of this disease is comparatively unknown to the average physician. Are we not too often neglecting the common disease for the more rare? Therefore I have offered no apology for claiming your time and attention for a few minutes.

It is not the object of this paper to give definitions, symptoms and varieties of hæmorrhoids. I know of no reason why I should discuss the pathological anatomy of pile tumors, for they are all alike amenable to this treatment, whether of recent or of long standing, venous or arterial origin, blind or bleeding, external or internal. Hæmorrhoids are sometimes complicated with abscess, ulcer, fissure, fistula and prolapsed rectum. The works of Kelsey, Allingham, Smith and others, give all the discriminating points

of diagnosis, and I would respectfully refer you to them for such information.

It is absolutely necessary to make no mistake in diagnosis when we apply the carbolic acid treatment, because I am satisfied it would be unsafe to inject a prolapsed rectum, or other healthy tissues with carbolic acid.

Piles are uncommon in either sex before puberty, and I have never seen them in children; however, Bryant in his *Surgery*, on page 533, speaks of the treatment and says it is alike beneficial to the child and adult.

I know of no cause of hæmorrhoids that would contraindicate the use of this treatment, yet I would not urge this method in all cases without regard to the patient's previous history. We are often applied to for treatment of piles when there is really no pile; nothing more than an irritated rectum, caused by strains, diarrhoea, a night's debauch, or the presence of some foreign substance. Such cases will readily yield, generally to hot water enemata, two or three times daily.

There is another class of cases that we should always advise to wait for a more convenient season to receive treatment. These are cases of pregnancy. The household syringe will render these also bearable until her term is passed, and then if the piles persist we should advise the patient to have them treated; but in most cases that apply for relief it is unnecessary to delay but proceed at once to make a radical cure of the hemorrhoidal tumor. We do this by mixing together pure carbolic acid one part, pure glycerine two parts, and enough morphine and tannic acid that ten drops of the mixture will contain one-quarter of a grain each. Let this be well shaken and thoroughly dissolved before using it.

I will not describe all the positions in which a patient may be placed for this operation; it is so simple that it can be done in any position that will command a good view of the tumor. The one that I have found to be probably the best, is the one which a toad assumes when in a sitting posture. In this position the patient will almost invariably protrude the tumors by an effort at straining down. However, if he should fail, then by gently manipulating with the fingers, the contraction of the anal sphincters will be overcome and allow the tumor to readily pass out.

When operating in the office I use a table about 18 inches wide, 30 inches high, with a stool at one end. The patient gets on the stool with his knees and lies down on the table with the face downward, which is an excellent position for this operation. For obvious reasons we select the tumor highest up the rectum for first injection; we then insert the needle at right angles to the base of the tumor near

its base, and deposit the medicament at different places by moving the needle during the process of injection. Allow the needle to remain in position until the blood in the tumor is coagulated, which will be accomplished in about half a minute. Then the tumor is reduced, if possible, well greased, and the operation is complete for that time. There is more or less burning for a few minutes after the injection. In the course of five or six hours the tumor begins to throb and ache in consequence of the swelling and also the destruction of the pile itself. This pain will continue from one to not over fifteen hours—the latter in cases of a large external irreducible tumor. In about three or four days the sloughing is complete, leaving a granulating surface which heals rapidly. After the healing process is finished the next tumor may be treated in a similar way as the first, and so on until all have been destroyed.

I prefer to inject the tumor while it is engorged and irritated, in which case the pain is not increased but actually diminished. I have never yet needed a speculum or any other instrument except the hypodermic syringe to do this operation successfully. I would suggest that not more than one large or two small tumors be injected at a time, because of the swelling consequent to the operation. Patients seldom suffer more from the operation than they do at any other time from an attack of the piles.

We should advise our patients not to indulge in any physical exercise that requires much effort; but ordinarily they are able to be up and do light work during the entire treatment. Nothing more than a gentle laxative should ever be used for the bowels. For the last ten years this plan of treatment has never produced any alarming symptoms, no secondary hemorrhage and no sloughing other than the pile itself. By it I have yet to report my first failure. By this method Drs. E. J. Denis, of Kansas City, Fred. R. Boyd, of St. Joseph, Mo., Q. A. Shufford, of Tyler, Tex., W. L. Rodman, of the University of Ky., have cured hundreds, while Drs. W. P. Agnew, of San Francisco, Kelly, of Cincinnati, Ives and Davis, of Chicago, Monroe, of Louisville, E. F. Hoyt, of N. Y., have each cured thousands of cases.

A complete cure of General Purulent Peritonitis with Perforation, generally considered as certainly fatal, was achieved by Dr. Routier, who opened the abdomen, allowing all the pus to escape and washing the cavity with an antiseptic solution which was freely used. The wounds were not closed, but free drainage was secured by means of strips of iodoform gauze. Two months after the operation the wounds were found to be completely healed, and the patient has suffered no inconvenience since.

Clinical Department.

ABSCESS OF THE LIVER.

BY ARPÁD G. GERSTER, M.D.

Professor of Surgery at the New York Polyclinic; Visiting Surgeon to Mt. Sinai Hospital and the German Hospital.

GENTLEMEN: The patient I show you to-day, is a young girl who was attacked with a violent pain in the region of the liver, accompanied by a marked enlargement of that organ and dullness both upwards and downwards, corresponding to the situation of the liver. The liver is movable on respiration and does not seem to be attached to the abdominal walls. Her general condition is fair, though she has a constant fever which is considerably aggravated towards evening. She has been continually growing worse, and I deem it proper to do something more than wait in a case so grave as this is. Nature, under circumstances like this, is a bad surgeon. When we have to deal with destruction of tissue by an acute suppurative process, that suppuration does not, as a rule, extend where we surgeons wish it should extend—towards the surface. A popular belief exists, which is still held by some medical men, that external applications will attract suppuration to the surface. That belief is an erroneous one. Suppuration extends to where the least resistance is encountered, into the loose connective tissue, which is usually perforated by pus. It is attracted towards the lymphatics, and by this we explain the fact that a suppurative process spreads in all directions before it finally perforates the surface. External applications, etc., are all right as long as you have to deal with a process on the surface, but when you are dealing with a suppurative condition situated in the deeper structures of the body, this rule does not hold good and your plain duty then is to find the location of the pus and let it out.

Assuming that you are dealing with an abscess of the liver, the pus in that case may work upwards towards the diaphragm, lead to a perforation of that muscle and enter the pleura, giving you all the characteristic symptoms of empyema. If you incise that pleura and drain it, you have not removed the abscess in the liver and the patient may succumb to the consequences of suppuration.

This is only one of the possibilities that may occur in these cases of liver abscess. Again, perforation may take place into the free peritoneal cavity, which is a still graver consequence, and the patient may develop a purulent peritonitis. Under such circumstances, all you can do is to write a death certificate. To be sure, we know that a large number of these liver abscesses are within the capsule of the liver and

that they assume large proportions before they perforate, ultimately becoming adherent to other organs, and permitting of safe incision.

Now, as to the methods of treatment, which I shall divide into two parts, first the methods of diagnosis, and secondly the methods of operation.

The diagnosis is based upon physical examination, the presence of pain and objective physical signs. Before we are justified in assuming that we have a liver abscess to deal with and before we can plunge a knife into the liver, we must have more evidence than a physical examination can afford; we must have the direct evidence of the presence of pus. You will first resort to a probatory puncture. Take a fine needle and plunge it into the liver. If the barrel of your needle shows a single drop of pus you are justified in going ahead and doing something more. If the liver abscess is not removed it will soon destroy so much of the liver tissue, that if you make your incision sometime afterwards, the patient will die on account of the miserable general condition into which he has passed owing to your neglect to operate in time. I have seen a number of such cases come under my care in hospital practice, where the abscess had been nursed for weeks until the patient was too weak to rally from the operation and died finally from exhaustion.

To diagnosticate an abscess of the liver early and incise it early, are more urgently demanded than in abscess in other portions of the body. Rational and modern surgery does not plunge a knife into any part of the body, but opens the tissues in a gradual manner, and after careful preparation, picking up and tying every bleeding vessel and cutting only under the guidance of the eye. As you cut down along the track of the puncture made by the needle, you will see a little drop of pus exude from the deeper part of the wound. Then lay aside your knife, take a curved retractor and push it along the cavity of the abscess, when out will gush the pus. You are then in the place you want to be.

The patient before us to-day, is one of those cases of abscess of the liver in which no adhesions at all exist. Here the abscess is not a large one and the case has been going on only for a few weeks or so. As in this case immediate incision of the abscess would involve soiling of the peritoneal cavity, we must, therefore, take whatever measures are necessary to prevent a purulent peritonitis. In such a case as this, a simple exploratory puncture with a fine needle, is a dangerous procedure. There are cases on record where abscesses of the liver, having no adhesions, were punctured through the abdominal walls, and septic peritonitis at once developed. That is a risk we do not propose to take. Within the last five or six years the technique

of operating on these liver abscesses has been very much improved. We propose to do now whatever is to be done under the guidance of the eye, *viz.*: open up the abdominal cavity and inspect the liver. If there be adhesions which your finger could not detect by physical examination through the abdominal wall, find them. Adhesions may exist towards the diaphragm, and the presence of an adhesion always means a threatening perforation. You should find the means to arrest the burrowing of the pus through the diaphragm. This can be done by evacuation of the pus by some other route. Ten or fifteen years ago the methods practised were to irritate the abdominal wall by various counter-irritants, the actual cautery, iodine, vessicants, etc., and thereby produce an inflammation which would extend down to the liver and cause adhesions. These methods were found to be insufficient, if not barbarous. I need not mention in this connection the use of chemical caustics, advised by the French surgeons in former days, when caustic potash was applied over the liver region every day until it burned through the entire abdominal wall and caused adhesive inflammation between the parietal and visceral peritoneum.

An important improvement in the treatment of liver abscesses was brought about by a German surgeon, Professor Volkmann, who suggested laparotomy, exposure of the liver, protection of the peritoneum by tampons, puncture of the liver to ascertain the exact locality of the abscess, withdrawal of the needle after the puncture had been successfully performed and inspection of the spot to see if any pus escaped from the puncture. If pus was found, then he packed the incision down to the liver with gauze, and put on a dressing. At the end of three or four days the gauze packing was withdrawn, exploration was made to see if adhesions were sufficiently firm, and then the liver was opened and freely drained. This is a good method, and I have practiced it myself successfully, but various authors have found that the irritation of the gauze was not sufficient to bring about adhesions. We know that some peritoneal membranes are so tolerant that they will not become inflamed and form adhesions, so that after insertion of a packing for a week, the peritoneum will look exactly as it did at the time of operation. This is a disadvantage, and of course, Volkmann was compelled to resort to some stronger irritant. He accordingly soaked the gauze in an irritant substance and introduced it into the cavity, thus exciting adhesive inflammation.

Time is lost by this procedure. Many of these cases are in great danger. Imagine a case where perforation into the pleura is threatening. You would not then want to wait a week to see if adhesions

formed. Lawson Tait, of England, has made great improvements in these cases of liver abscess. He has shown that the liver can be treated like any other viscous, that like the stomach, it can be attached to the abdominal walls by sutures. Formerly, surgeons were afraid to touch the liver, because it bled profusely, and there are cases to this day in which there is great engorgement of the vessels of the liver because of interference with the portal circulation. Under such circumstances, the slightest scratch is sufficient to bring about a very small, but continuous and steady hemorrhage, which will ultimately cause the patient's death. I have seen such hemorrhages take place and therefore the disinclination of the surgeon not to meddle with the liver is justifiable.

In those cases where the diagnosis of an acute abscess is made, the adhesion of the liver to the abdominal wall can be brought about by sutures so arranged that the circle of sutures surrounds the place where the puncture has been made. Having done that the cavity is packed and you wait twenty-four hours if the nature of the case permits of it. If the case be an urgent one, make your sutures tighter and cut down instantly. There is a certain amount of risk attending this procedure, but the surgeon must weigh the risk. If the patient is in great danger, then risk the danger, go ahead and incise at once. If the condition is good, then wait for twenty-four hours, because you know at that time firm adhesions will have taken place and your incision can be done with a great deal more safety to the patient.

Now, as regards the incision into the liver abscess. It is done with the thermocautery in order to produce an eschar along the cut. Such an incision made with the actual cautery, is more apt to cease bleeding quickly than one made with the knife; and in abscess of the liver, it has another advantage, in that it tends to check the hemorrhage.

There is a class of hepatic abscesses in which the prognosis is bad, and in which, if you do interfere, the patients generally die. This form of abscesses accompanies chronic intestinal affections, such as acute and chronic dysentery, where emboli are carried into the liver and cause a large number of multiple abscesses which become confluent to a great extent. In these cases the liver abscess is only a symptom of a much graver malady—a symptom of a condition of pyemia. You may incise one abscess and incise all, and the patient continues to have the chills accompanied by sweats, which always indicates the development of a new abscess; and when such a patient dies ultimately, and you have a chance to make a post-mortem examination, you will find all the organs the seat of abscesses.

When you have to deal with a case of liver abscess,

be very careful and painstaking in establishing the previous history of the case. If there is any previous history of chronic intestinal trouble, be very guarded about your prognosis. Say to the patient that there are other abscesses, that you will relieve the one in the liver, but cannot promise a cure of the trouble. If there is no chronic suppurative process going on elsewhere in the body, and if there is a single abscess, then the prognosis is good. In the case before us I am justified in assuming that there is a local trouble limited and circumscribed, and if we relieve that, the patient's condition will be improved and he will be cured.

PUERPERAL FEVER AND ITS TREATMENT.

By W. GILL WYLIE, M. D.

Professor of Gynecology at the New York Polyclinic; Visiting Gynecologist to Bellevue Hospital.

This patient is twenty-five years old and has been married eight years. She has two children, the last one born six weeks ago, but has had no miscarriage. Since the birth of her last child she has been troubled with pains in the back and on the right side together with headache and fever.

This woman was delivered by a foreign midwife. A great many of the women who come to this clinic have trouble from the same source. This case gives me an opportunity to say a few words on the subject of puerperal fever.

First, as to the prevention of puerperal fever, the first important consideration for a doctor is to have a nurse under his own personal control.

Some time before delivery I procure certain articles that I need, and the most necessary one is a solution of bichloride of mercury and tartaric acid after the following formula:

B Hydrargyri bichloridi	3 ij.
Acidi Tartarici	3 x.
Aquaæ	3 viii.

M. & S. A teaspoonful of this mixture contains two grains of bichloride of mercury and the addition of the tartaric acid renders it soluble. Then I provide iodoform and carbolic acid, and a needle and thread.

The nurse is instructed to wash the vulva of the patient with this solution and to see that the bowels are regularly moved. I make it a rule to never examine a patient without first washing the hands in a mixture of equal parts of alcohol and tincture of green soap, and next dipping them in a solution of bichloride of the strength of 1-4000. After delivery of the woman, which process I attend to myself, if the instruments or the hands have been introduced into the vagina, the uterus and vagina are washed out carefully and the nurse instructed

to keep the vulva clean. The most practical method of doing that is never to use a sponge, because a sponge once infected cannot be again cleansed. I instruct her to throw, by means of a clean rubber bulb syringe, the bichloride solution into the vagina several times a day, and place gauze over the vulva, the gauze having first been squeezed out in a solution of bichloride and dried. Then if there is any odor to the discharges vaginal douches are given of bichloride solutions and afterwards 1-100 carbolic acid solution till the odor has gone. If the patient has a rise of temperature and chill the nurse is instructed to use the bichloride solution every hour in washing out the vagina. If the temperature does not fall to normal, then I wash out the uterus with a weak solution of bichloride or with a carbolic solution of the strength of 1-100 or 1-60. In washing the uterus out, I do not use a stiff glass tube, but a stiff gum catheter, No. 12, and I generally carry it up to the fundus. The connections are then made and the syringe pumped very gradually until the current passes down the vagina and out the vulva. It generally takes from fifteen to twenty minutes to clean out the uterus, and I use about a gallon of water. In a bad case of puerperal fever the first washing induces another chill and another rise of temperature. If you follow the instructions of the text books you will find that they advise the washing to be done but once in eight hours. I have proved to my own satisfaction the fallacy of this advice. The germs are not destroyed by the first nor the second washing, and they develop again in eight hours, so your washing is practically futile. I have learned from experience the value of frequent washing out of the uterus in cases of puerperal fever.

The late Dr. J. Marion Sims once attended a patient who developed puerperal fever suddenly at a hotel in this city. She was seized with a hemorrhage one morning and was carried up stairs flooding and in pain. Dr. Sims tamponed her after the orthodox fashion, but it did not stop the hemorrhage. She was curetted the next day and the bleeding was so profuse that the tampon was again inserted. I objected to this procedure because both tamponings were followed by a chill and fever which the second time rose to 105° F. We had now a full fledged case of puerperal fever.

I then began washing out the uterus every three hours and remained with the patient till she was cured, and she is living to-day in perfect health. The mistake I made was in not washing out the uterus every hour. I once washed out the uterus of a patient who had puerperal fever every hour for twenty-four hours and at the end of that time the patient recovered. The next patient I had got well in twelve

hours. When I went to Bellevue Hospital as visiting gynecologist some years ago, the death rate of patients suffering from puerperal sepsis was four out of five cases. Nine patients with puerperal fever happened to be there, in all whom the fever had been present for twenty hours. I washed out most of these cases myself and succeeded in curing seven out of the nine. Since that time the house staff of Bellevue Hospital have adopted this method, and four out of five cases are now cured instead of four out of five dying as formerly.

One mistake I wish to call your attention to, which you are very apt to make in washing out the uterus in a case of puerperal fever, and that is, in the use of a stiff double catheter and failure to pass it to the fundus. If you ask some teachers what is the larger cavity two or three days after the uterus has contracted, the cervix or the fundus, you will be told that the latter is the larger. It is of great importance to remember this, as it is a frequent source of trouble. I will relate a case to illustrate this:

About three months ago I was called upon by a doctor to attend a relation of his who was quite sick. This woman had had a baby about ten days previous to his visit. She did very well the first week of confinement, but at the end of this time she experienced chilly sensations and a rise of temperature of of 102° F. or 103° F., with some sore throat and an abscess developing in the tonsils. The doctor opened the abscess, taking it for granted that the fever was due to the throat trouble. The next morning she had a chill and a temperature of 104° F. or 105° F. The patient was attacked by one chill after another till the fourth or fifth day after the first chill when she was considered in a hopeless condition. When the doctor called on me and stated these facts I told him it was rather late, but I would go up and see what could be done. I called at 10 o'clock at night and made an examination of the patient. I found no positive signs of peritonitis, but gave it as my opinion that the woman had something in the pelvic cavity of a septic nature, and that unless this septic material was found and removed she would not live. I put the patient on a table, and examined her uterus, when, to my surprise, I found it measured eight or nine inches. I said if this uterus is not large enough to hold sepsis I do not know what is. I did not operate, but washed out the uterus and left one of my assistants with instructions to continue the washing every hour. I removed considerable material from the cavity of the organ. Shortly afterwards the patient had a violent chill with a rise of temperature to 105° F., but that did not discourage me in the least. For six hours the uterus was washed out with a 1-100 carbolic acid solution and at the end of that

time the temperature had fallen to the normal and the woman got well.

I believe now, and I say it with perfect sincerity, that nine cases out of ten cases of puerperal fever that I am called upon to treat in from twelve to twenty-four hours after the onset of the attack I will cure by simply regulating the bowels and washing out the uterus systematically and thoroughly, as I have pointed out to you. Within this period of time the septic material is confined to the uterus, vagina or cervix in a place easy to attack it and has not yet entered the connective tissue, veins or lymphatics. If I am called to wash out the uterus in a case of puerperal fever, and within six hours or so the temperature does not fall to normal, I then make up my mind that the poison has entered the connective tissue, veins or lymphatics, and in that event I open the abdomen and generally find an abscess present. I have done this in a case of well marked phlebitis or milk leg with success, which some of the most eminent men in town pronounced absolutely hopeless. I believe now that there are a great many cases of milk leg where suppuration takes place that ought to be operated upon, and yet I do not open the belly every time as some suppose.

STRICTURE OF THE URETHRA.

BY JOHN A. WYETH, M.D.

Professor of Surgery at the N. Y. Polyclinic, Visiting Surgeon to Mt. Sinai Hospital, etc.

The patient was a man, aged 32, who presented at the clinic with a stricture of the urethra. In a typical case of stricture there is an increase of the sub-mucous layer in consequence of a migration of the leucocytes and cell-proliferation. The lining membrane of the urethra becomes swollen and the calibre of the canal diminished. As the acute inflammation subsides the calibre of the tube is diminished by contraction which occurs in the newly formed connective tissue deposit.

The most frequent seat of stricture is found to be that portion of the canal limited behind by the compressor urethrae muscle and in front by the suspensory ligament at the junction of the penile with the perineal urethra. The next most frequent seat is the first inch from the meatus.

The symptoms of stricture are characterized by a gleety discharge, interference with the escape of urine or semen, and pain. No matter what symptoms may be present in cases of organic stricture, a diagnosis can only be reached by instrumental exploration, by which means the exact location and character of the stricture can be positively determined.

To this end a bulbous bougie is essential, which may be made either of gum elastic or metal. They should be of all sizes commencing with No. 6 and ending with Nos. 21 or 23 (A. S.)

In attempting to locate the stricture the diameters of the normal urethra at various points must be borne in mind. The meatus is the least dilatable portion of the canal, and the membranous portion comes next in order. The bulbous portion is the largest part of the canal.

To pass the instrument the patient should be placed upon a table or bed in the dorsal position. In order to secure local anaesthesia, from twenty to thirty minims of a four per cent. solution of cocaine should be thrown into the urethra. It is not necessary to carry the point of the syringe more than an inch within the meatus. The syringe is emptied and the patient is directed to grasp the glans penis, so as to retain the injection after the instrument is removed. Within five minutes or so local anaesthesia is secured.

Having injected the cocaine into the urethra, the stricture should then be accurately located and its diameter and extent determined by means of the bulbous bougie. In the selection of an instrument for dividing the stricture, Otis' urethrotome will be found to fulfill all indications. I have added to this apparatus a cog-wheel appliance attached near the handle, by means of which the knife is carried steadily forward or backward and is made to cut with mathematical precision. The operator should stand at the right of the patient, who is resting on his back with legs fully extended. The knife should be carried forward until it disappears near the tip of the urethrotome, the bars of which are now closed and oiled as far as it is to be introduced.

The glans penis is grasped between the thumb and finger of the left hand and the penis held in the same position as when the stricture was located. The instrument is then carried in until the rubber ring touches the meatus. The incision should be made a quarter of an inch behind the stricture and terminate about the same distance in front of the anterior boundary. To demonstrate a perfect division of all the fibres of the stricture, a full sized sound may be carried through the strictured part and any undivided fibres torn or stretched.

The hemorrhage that follows this procedure when the incision has been made in the pendulous portion of the urethra may be readily arrested by turning the penis upon the abdomen, placing a layer of gauze or cotton over the organ, and strapping it down with a bandage carried around the pelvis. The patient should then be put to bed and compelled to remain quiet for several days.

Proceedings of Societies.

AMERICAN MEDICAL ASSOCIATION.

GYNÆCOLOGICAL SECTION.

[FROM OUR SPECIAL CORRESPONDENT.]

The section on obstetrics and gynæcology of the 43d annual meeting of the American Medical Association, was opened with the inaugural address of the president, Dr. E. E. Montgomery, of Philadelphia, on some mooted points in obstetrics and gynæcology. The paper discussed the value, according to present experience, of the improved Cæsarean section, the operation of resection of the sacrum for the removal of diseased structures in the pelvis, the total extirpation of the uterus for fibroid tumors, and was a careful and well prepared presentation of the subject.

Dr. T. R. Barker, of Philadelphia, Pa., read a paper on the relation of the duration of gestation to legitimate birth, his plea being that this duration was an inconstant quantity, and that it was unfair to suspect illegitimacy in many of the cases in which the usual period of 280 days was exceeded. He gave a table of cases in his own experience, in which the variation from this period differed considerably. (In our opinion such a point is a most difficult one to determine. Often it cannot be determined with accuracy. Of course, for medico-legal purposes a standard must be determined upon, but it cannot be rigidly adhered to for reasons which are obvious to any thoughtful mind.)

Dr. J. Milton Duff, of Pittsburgh, Pa., read a paper entitled "Report of Cases of Albuminuria of Pregnancy Treated by Chloroform Internally." This method has been advocated by some writers, but the reader had found it unreliable and ineffectual. He had found the effect of such treatment deleterious and was not at all favorable to its practice.

Dr. G. J. McKelway, of Philadelphia, Pa., read a paper entitled "Delivery through the Abdominal Walls versus Craniotomy in otherwise impossible Births." He believed that the value of craniotomy was not yet fairly determined because of the unfavorable conditions under which it was usually performed. It was impossible to say what the maternal mortality would be if craniotomy were resorted to very early. It was often performed only when other measures of delivery had failed. The results of Cæsarean section should be considered only since the Listerian era had been inaugurated. An important question also was what degree of risk should a woman be subjected to before such an operation was performed? We were also confronted with the important question: Has the unborn child any rights which the obstetrician is bound to respect? According to approved statistics

craniotomy had an average maternal mortality of about 8 per cent. There was also a possibility of serious injury to the mother from this operation which might make her subsequent life a wretched one. The statement had been made that the Cæsarean section performed advisedly should have no mortality, but in the light of facts this statement was believed to be hardly tenable. The statistics of the most skillful operators had shown that under the most favorable conditions this operation had an average mortality of not less than 10 per cent. The same was also true of the Porro operation. It was believed that too little thought or regard had been paid to the rights of the child in this matter. Quotations from numerous writers were made to show that the risk to the mother was not much greater by the Cæsarean operation than by craniotomy. It was believed that the obstetrician should decide for himself in such cases as to the proper course to pursue, without the interference of the friends of the patient, for the responsibility of the case rested with him.

Dr. E. P. Davis, of Philadelphia, emphasized the necessity for early diagnosis of cases which were suitable for Cæsarean section. It should not be said that craniotomy upon the living child was never proper, for it was indicated in case of monsters, in cases in which extensive hydrocephalus was present, and the child would be incapacitated for extra uterine existence. Dr. Ashton, of Philadelphia, believed that the choice of Cæsarean section or craniotomy should be left with the mother, as she was the one who was most concerned. It should not be forgotten that the subjects of Cæsarean section not infrequently suffered from hernia after such operations. If the question were one of operating upon a member of the obstetrician's own family, very few Cæsarean sections would be performed.

Dr. Reed, of Ohio, opposed the proposition of craniotomy upon the living child and narrated several cases in his own observation in which the operation had resulted fatally. He believed there were many fatal cases which never were recorded.

Dr. Rohe, of Baltimore observed that tables of statistics and the application of general principles should not govern the action of obstetricians in choosing between craniotomy and Cæsarean section. It was perfectly justifiable in certain cases to take human life by the performance of craniotomy, however repugnant to one's feelings the operation might be. There were undoubtedly cases in which such an operation was far more appropriate than Cæsarean section.

Dr. E. Van de Warker, of Syracuse, N. Y., read a paper entitled "Hysterical Mania as a Complication of Gynæcological Cases." It was believed that the

classification of hysterical mania should be the same as that of other forms of mania. The condition was not one which tended to terminate in chronic insanity. Very many women were confined in lunatic asylums without due cause; their insanity being imitative. Probably 10 per cent. of those who were thus incarcerated should be returned to their homes. This fault was largely due to the inefficiency of the physicians in attendance upon lunatic asylums. In hysterical maniacs there was no serious mental trouble, their actions were logical, therefore they were not subjects for the treatment received in lunatic asylums. There were also cases of hysterical melancholia and dementia analogous to those in which the mental condition was really a serious one. Another variety was hysterical mania of traumatic origin. This was especially noticeable after serious surgical operations and had become more or less prevalent since the introduction of anaesthesia. All these types were susceptible of cure, and their duration might not be a protracted one.

Dr. G. H. Rohe, of Baltimore, Md., read a paper entitled "The Influence of Parturient Lesions of the Uterus and Vagina in the causation of Puerperal Insanity." Four cases were narrated illustrating the author's subject. In the first there was mania of a violent type with distinct lesions of the tubes and ovaries. These organs were removed and after eight months of observation great improvement in the physical condition of the patient was noticeable. The mental condition was not a sound one and probably never would be, but the patient was no longer violent or obscene, and was able to take proper care of herself and her surroundings. In the second case there was mania with hallucinations. The diseased appendages had been removed and a distinct improvement in the habits and manners of the patient had occurred. There had not been much improvement in the mental state. In the third case there were delusions and hallucinations, and great sexual excitement, especially during the menstrual period. The appendages had been removed and the patient's mental condition had been entirely relieved. She could be discharged and resume her customary duties. In the fourth case insanity had followed each of her three confinements. Sexual excitement was marked. The appendages were removed and she was discharged cured of her mental disease in two months. In all these cases there had been some disease of the sexual organs, and it was deduced from these and other cases in the author's experience that the cause of puerperal insanity should be sought in such disease, and the cause removed by the removal of the organs. The conclusions which were offered were that puerperal insanity was an infectious psy-

chosis; that few cases occurred without a precedent or coincident puerperal infection. The condition was usually accompanied by elevation of temperature, as was ordinarily observed in confusional or acute mania, and in febrile delirium. The death rate in such cases was high. The pelvic organs were frequently diseased coincidentally. With the latter complication the removal of the diseased organs increased the chances of recovery.

Dr. W. H. Wathen, of Louisville, Ky., read a paper entitled "The Prevention of Stitch or Mural Abscess and Ventral Hernia after Laparotomy."

It was inevitable that abscess and hernia would occur in some cases, however great the care that had been exercised, and whatever the suture material. That material should be sought which was least irritating to the tissues, and it should be removed at the earliest practicable moment. By carefully suturing the tissues of the abdominal wound, layer by layer, absorbable material such as carefully prepared catgut or kangaroo tendon being used for the lower layers and wormgut for the superficial sutures, the tendency to hernia would be reduced to a minimum.

Dr. D. T. Gilliam, of Columbus, O., read a paper entitled "The Operative Treatment of Ventral Hernia Resulting from Abdominal Surgery."

The anatomical conditions of hernia following abdominal section, differed from hernia due to other causes. The cicatricial tissue which resulted after an abdominal section, did not furnish a strong barrier against hernia and predisposed patients to such an accident. The operative treatment of such hernia was very often unsatisfactory and unsuccessful. The aim in such operations should be to restore the original condition and relations of the tissues as nearly as possible, and seek to obtain union by first intention. The treatment which was proposed was analogous to that which was adopted in the Sims' operation for cystocele. The protruding tissue should be depressed with a sound, a wide elliptical denudation should be made around this depressed tissue, the edges of the ellipse, including the borders of the retracted recti muscles, brought together with a sufficient number of sutures, the buried skin and peritoneum forming the wall of the hernia, thus strengthening the barrier which was offered against further protrusion.

A paper was read by Dr. A. F. Currier, of New York, on "The Causes and Treatment of Sinuses resulting from Abdominal Section." (See page 203).

The three foregoing papers were discussed together.

Dr. E. W. Jenks, of Detroit, Mich., referred first to the formation of mural abscess. He believed that we were apt to give too much prominence to bacterial theories in such matters, though he did not wish to

belittle the importance of bacterial science. Abscess from strangulation of tissues might be avoided with proper care on the part of the operator. In not a few instances he believed that abscess was inevitable whatever precautions were taken, the mischief coming from within the abdomen, not from without. If the tissues were greatly bruised or if the abdominal fat were abundant, abscess was liable to occur. The speaker did not believe that abscess would be prevented by the use of iodoform. With regard to drainage, it was often a necessity and he favored the use of glass tubes. He did not think it necessary to make a separate suture of the peritonæum in closing abdominal wounds.

Dr. L. S. McMurtry, of Louisville, Ky., dwelt upon the necessity of shortening the duration of the abdominal operation by every possible means. Thorough cleanliness in operating, which was an indispensable factor to success, could only be acquired after one had served a long apprenticeship. If abscess occurred it was more likely to be due to want of cleanliness than to strangulation of tissues. Ventral hernia was frequently caused by allowing patients to get out of bed too soon. Tympanites and tension, and hence weakening of the abdominal wound, would be prevented by the free use of salines before operations and avoidance of milk diet after. The operations for ventral hernia were much more important and difficult, if properly done, than they were frequently represented to be.

Dr. S. C. Gordon, of Portland, Me., did not believe in the use of the drainage tube; it implied a confession that something wrong had been done. The abdomen should not be closed until all offending material had been removed.

Dr. McIntyre, of St. Louis, Mo., was very pronounced in his belief in the value of the drainage tube. It was impossible to tell in certain cases whether the conditions would be aseptic or not, and the drainage tube would anticipate trouble. He believed it far safer to trust in the drainage tube than in the free use of antiseptics within the abdominal cavity.

Dr. R. B. Hall, of Cincinnati, O., used the drainage tube in every case of abdominal section which he had. He thought the danger of infection from the use of the tube was not to be considered. As to suture material he preferred worm gut.

Dr. G. M. Edebohls, of New York, believed that abscesses would seldom occur if aseptic measures were used. In operating for ventral hernia he advocated closing the tissues in separate layers. As a suture material he preferred chromatized catgut to kangaroo tendon. The latter was expensive and uneven. He was in the habit of using a buried worm gut suture

for all except the superficial structures and for these he used catgut.

Dr. E. Ricketts, of Cincinnati, O., believed thoroughly in the use of the drainage tube, but not for all cases. He preferred worm gut as a suture material.

Dr. W. C. King, of Kansas City, Mo., used the drainage tube in those cases in which irrigation had been required, but not in simple cases. He preferred soft rubber tubes to glass.

Dr. L. S. McMurtry, of Louisville, Ky., read a paper on "The Influence of Delayed and Incomplete Operations upon Mortality in Pelvic Surgery."

This was a plea for early operation in cases in which an operation would ultimately be inevitable. Also there were very few operations which with reasonable skill could not be carried to the end, and all or nearly all offending structures removed.

Dr. W. E. Ashton, of Philadelphia, Pa., read a paper on "Intestinal Obstruction Following Abdominal and Pelvic Operations." This was a careful and thoughtful consideration of the causes attending intestinal obstruction and some of the means of avoiding them.

Dr. G. B. Massey, of Philadelphia, Pa., believed that pelvic and abdominal operations were done far more frequently than the conditions warranted. His plea was for the use of electricity as a substitute in those cases in which it would serve as good or a better purpose. The positive evidence of pus in the pelvis should furnish the only indication for pelvic operations.

Dr. R. B. Hall, of Cincinnati, O., dissented decidedly from the last sentiment. There were other indications besides suppuration which demanded operative interference.

Dr. J. Taber Johnson, of Washington, D. C., believed that intestinal obstruction could usually be traced to faulty technique on the part of the operator. Perhaps it had been hasty or incomplete. He also agreed with the statement that delayed operations often rendered the result more serious, in addition to increasing the difficulties of the operator.

Dr. F. Martin, of Chicago, Ill., referred to the necessity of leaving as little of the pelvis and abdomen denuded of peritonæum as possible. Gaping portions should be stitched together when possible, and omental grafts should be attached over extensive denudations. Salines should be used as early as twelve hours after the operation.

Dr. E. Ricketts, of Cincinnati, O., called attention to the value of the free use of strychnia hypodermically both before and after abdominal operations.

Dr. W. E. B. Davis, of Georgia, believed that the danger of intestinal obstruction and adhesions to the

peritonæum was not great if the intestines and omentum were replaced in their normal position after an abdominal operation. Much manipulation of them would be almost sure to cause adhesions. Saline purgatives would do no good unless used before adhesions had formed. He was not in favor of early operations upon fibroid tumors, believing that in a large number of cases they did no particular harm.

Dr. E. P. Davis, of Philadelphia, Pa., believed that the use of iodoform or boric acid within the abdominal cavity would sometimes prevent the formation of intestinal adhesions. The experiments upon the intestines of dogs, which had been narrated by the reader of the paper, were not a good basis for deductions, the conditions differing so much from those in the human subject.

Dr. W. E. Ashton, of Philadelphia, Pa., admitted that if adhesions of the intestines had formed when salines were given the latter would not separate them. He approved entirely of the use of strychnia and was in the habit of giving it in doses of one-tenth to one-fifteenth grain three days before and three days after operation.

Dr. L. S. McMurtry, of Louisville, Ky., admitted that some forms of fibroid tumors did not require early operation; but the soft œdematosus myomata were liable to cause much trouble and should be removed early.

Dr. E. Laplace, of Philadelphia, Pa., read a paper on "Micro-organisms in the Diseased Endometrium and Surgical Interference."

A series of investigations had first been made by him upon scrapings from the healthy human endometrium. Twelve varieties of micro-organisms were found and cultivated, and experiments with the cultures were made upon animals. In some cases the results had been fatal and in some no harm had resulted. The deduction was that most of these micro-organisms in the human being, the endometrium being in good condition, do no harm. Experiments were also made with scrapings which were taken from a diseased endometrium, and many colonies of virulent micro-organisms were developed. It was a fortunate fact that the secretions of the uterus were a poor medium for the culture of germ life, hence in many cases these noxious germs did not get into the blood and produce serious reactions upon the system.

The effect of cold was mentioned as a serious factor in intensifying the action of virulent germs. It produced congestion, with the discharge of serum in which germs would flourish vigorously and produce their characteristic irritation. Curetting, therefore, formed a rational mode of treatment on the basis of the existence of micro-organisms.

Dr. G. B. Massey, of Philadelphia, Pa., did not feel convinced of the presence of germs in the healthy endometrium from the statements which had been made. He approved of the treatment of endometritis by the curette, with or without the addition of electricity. The latter would destroy the germs if germs were present.

Dr. G. J. McKelway, of Philadelphia, Pa., thought the teachings of the author's paper emphasized the necessity of the greatest caution and cleanliness in operations within the womb, especially in the use of the curette and the sound.

Dr. A. Vanderveer, of Albany, N. Y., thought the paper a very suggestive one. He was much in favor of curetting for intra-uterine disease, and he believed one should also be particular that the womb was thoroughly irrigated to remove all debris.

Dr. Robert T. Morris, of New York, wished to emphasize the value of peroxide of hydrogen for the sterilization of the uterine cavity. If it were used thoroughly he would not hesitate to introduce dirty instruments into the uterus afterward; so much confidence did he have in the efficiency of the drug. But this was not an excuse for dirty instruments and he always kept his scrupulously clean.

Dr. Nelson, of Chicago, Ill., wished to draw attention to the fact, not always remembered, that the cavity of the uterus was triangular in shape. This fact had an important bearing upon the manner in which one performed the operation of curettage.

Dr. S. C. Gordon, of Portland, Me., described his method of carettement which was intended to be very thorough.

Dr. W. E. Ashton, of Philadelphia, Pa., believed that curettage should not be performed indiscriminately as seemed to be urged by some. If the uterus were immovable or the appendages were adherent, the operation should not be performed, in his opinion.

Dr. W. W. Potter, of Buffalo, presented a paper entitled "Asepsis and Antisepsis as Applied to the Lying-in Chamber."

This subject had often been discussed, but definite rules of action had not been agreed upon as to when these methods should be adopted, how far they should be carried out, and when they should cease. Prior to the Listerian era nothing had been done to eliminate septic influences from the parturient chamber and even now, though many of Lister's original methods had become obsolete, the principles remained and were of supreme value. The simplest rules were laid down and were grouped as follows: the patient must be made clean with soap and water and should have daily baths for several days prior to parturition. As soon as labor began the lower bowel should be

emptied by means of an enema, and the vagina should be irrigated with a hot antiseptic solution. The patient must then be placed in a clean bed, the coverings of which, as well as her own clothing, must be rigidly and absolutely clean. A number of clean napkins, which had been washed in bichloride solution, must be at hand, and any departure from these directions must be considered reprehensible. The physician must also be absolutely clean and aseptic, and the same statement must apply in an imperative sense to the nurse, especially with reference to her hands and finger nails. Digital examination of the genitals during labor should be reduced to the smallest possible number, and the toilet of the genitals after labor should be made by the physician himself. If such simple rules were adhered to, puerperal fever would be unknown, and ophthalmia neonatorum would rarely be heard of. Great stress was laid upon the necessity of a thorough intra-uterine toilet when such a measure became necessary on account of threatened septic invasion. If such rules were adopted in the large maternities and in private practice as well, the mortality of parturition would be reduced to a minimum. Elaborate statements for carrying out these rules were not made, the object being only to offer hints and suggestions as to their importance. A plea was made for their more universal adoption by the general practitioner. There was more danger to life in the aggregate by the neglect of these measures than from pulmonary phthisis, which numbered its hundred thousand victims annually.

Dr. Geo. M. Edebohls, of New York, read a paper on "Combined Gynæcological Operations." (See page 205).

Dr. A. F. Currier, of New York, had witnessed the combinations which Dr. Edebohls referred to in the practice of the latter, and vouched for the correctness of his statements. The question of time saving was, of course, an important one to the patient, but one should also consider the skill and facility in operating of the gynæcologist. Many gynæcologists whose operations were not numerous would hardly feel warranted in attempting so many operations at one sitting, as they would be entirely unable to perform them in the limit of time prescribed by the reader. On the other hand, if the patient were in good condition and bore the anæsthetic, the speaker saw no reason for prescribing the time limit as an hour and a-half. Certainly many operations far exceeded that limit of time, the patients doing perfectly well. He did not believe it wise for any except the very expert to combine abdominal section with other operations.

Dr. H. O. Marcy, of Boston, Mass., thought there was little to be gained by a long period of preparation

from one operation to another. He had been an advocate of combined operations for many years. He was opposed to the use of silk and worm gut as suture material in such operations and considered that a much more satisfactory material was to be had in kangaroo tendon.

Dr. S. C. Gordon, of Portland, Me., read a paper entitled "Hysterectomy Without a Pedicle."

The gradual progress which had been made in the treatment of fibroid tumors of the uterus, was remarked from the simple treatment of symptoms to the most radical measures of operation. The effect of electricity in relieving the severe symptoms in many cases of fibroid tumor had been marked in some cases, and the endorsement of that agent for this purpose by such men as Keith and Apostoli, was a great point in its favor. With most surgeons, however, there was very little faith in its potency; certainly when the question of complete cure was considered. The great danger of delay in cases in which haemorrhage was either constant or intermittent, in which the tumor was large and vital organs were threatened, was earnestly referred to as an argument against temporizing measures. The danger of transformation from benign to malignant disease was also an important consideration. All these facts pointed to the necessity of radical operations, and it should be the aim of the gynæcologist to offer such an operation as would least jeopardize life. Martin's excellent work in this direction was referred to. The reader believed that hysterectomy could be made as safe as ovariotomy.

Supra-vaginal hysterectomy always presented the vexed question of the treatment of the pedicle for consideration, and various propositions had been suggested for the solution of the problem. The author considered all of them inferior to that operation by which the entire structure of the uterus was removed. His method was to suture the folds of the broad ligament on either side with an over and over stitch, cutting away the attachment to the uterus as each step was taken, dissect away the peritonæum anterior and posterior to the uterus, remove the organ, and then suture together the anterior and posterior peritoneal flaps, thus shutting off the pelvis from the vagina. He was quite satisfied with the results of the operation. No drainage was used.

Dr. A. Vanderveer, of Albany, N. Y., read a paper entitled "Carcinoma of the Uterus Complicating Pregnancy."

The author had found records of sixteen cases in which vaginal hysterectomy had been performed for carcinoma of the uterus, the operation being done prior to the fourth month of utero-gestation. He had also found records of a small number of cases in which Freund's operation had been performed, where

the cancer had not been discovered until a late period of pregnancy. There were other cases in which pregnancy was so far advanced that it was deemed advisable to allow the pregnancy to continue until term in the hope of obtaining a living child. These cases might serve as a basis for the choice of procedure, the principal element governing such choice being the period of pregnancy which was reached when the diagnosis of carcinoma was made.

Dr. E. P. Davis, of Philadelphia, Pa., believed that the Cæsarean section should be the operation of election if the diagnosis of cancer were not made until the latter portion of pregnancy.

Dr. Robert Morris, of New York, read a paper entitled "Experiments Germane to the Use of Abdominal Supporters after Laparotomy.

The experiments in question had been made upon rabbits; the abdomen being opened and the peritoneal wound closed with catgut absorbable in eight days; the muscles and fascia with catgut absorbable in fourteen days and the skin with catgut absorbable in eight days. In animals which were killed in seven days it was found that the tissues of the wound were healed, but that with slight tension the fibres of union could be readily pulled apart. In those which were killed after fourteen days the tissues were as firmly united as they could be and could be pulled apart only with the exercise of considerable force. If there had been a stitch-hole abscess, the union would have been less firm and could be more readily broken than if there had been union by first intention. These experiments proved to the reader's mind the advantage of closing abdominal wounds with several layers of sutures. Experience had also taught him that the abdominal supporters, which were so often used after abdominal section, were not of particular use in preventing hernia. If the wound were firmly united he believed that no supporter was necessary.

Dr. A. F. Currier, of New York, believed that the suturing of the peritoneum was unnecessary. Union of its edges took place very quickly under ordinary precautions. He also preferred an incision through the rectus muscle, union being firmer than if the incision were through the linea alba. Wylie's method of suturing the fascia separately, had served him satisfactorily. He agreed with the reader of the paper as to the inutility of abdominal supporters in preventing hernia. They were usually ill-fitting, especially after they had been worn a short time. He always recommended the wearing of long strips of rubber plaster over the abdomen, in preference to other support, the strips to be worn at least six months.

Dr. E. H. McKelway, of Philadelphia, Pa., concurred with the previous speaker that there were

plenty of cases in which the ordinary supporters were valueless, and in which the support of rubber plaster was efficient.

Dr. E. H. Jenks, of Detroit, Mich., read a paper entitled "Colpo-perinæorrhaphy."

This was what was commonly known as the flap-splitting or Tait operation. He had practiced it since 1877, and had published descriptions of his operation in 1877 and 1880. His paper referred only to secondary operations and was not a discussion of the merits or demerits of other operations. A laceration of the perineum was not *per se* an indication for an operation, it was the consequences which furnished the indication. These were loss of functional power of the vagina, loss of sustaining power of the anterior wall, loss of support to the uterus, and remote nervous and other troubles. The operation was not a success unless these difficulties were relieved. In performing the operation the incision should be carried as high in the vaginal septum as was required by the relaxation of the vaginal mucous membrane. The splitting could be done with either scissors or knife. The sutures should be passed deeply and by means of a Peaslee needle. For suture material he preferred worm gut, but silver could also be used with safety. Pain was more frequently present with silver than with worm gut sutures.

A. F. C.

Treatment of Aneurysm by Extirpation.—Kubler (*Beitrage zur klin. Chir.*, Bd. ix, Heft 1) reports three cases in which Prof. Bruns, of Tübingen, performed extirpation of an aneurysmal sac. In each case total extirpation of the sac was followed by speedy and complete recovery. Notwithstanding the difficulty of this operation and its demands on the time and patience of the surgeon, it is strongly advocated by Kubler as being the best method of treating aneurysm of a limb. He has collected forty cases from different sources, the results of which go far to confirm this opinion. Twenty-eight of those were cases of arterial aneurysm, and in the remaining twelve both artery and vein were involved in the swelling. The aneurysm was non-traumatic in eleven cases, and the result of injury in twenty-nine cases. In eighteen cases it was seated in one of the lower, and in sixteen in one of the upper limbs. In thirty-nine of these cases, three of which were treated before the era of antiseptic surgery, the operation was completely successful. In each of the three cases treated by Bruns the sack was dissected away *in toto*, and unopened, the vessels on the proximal side having been previously tied and divided.—*British Medical Journal*, May 28, 1892.

Abstracts and Selections.

AN OPERATION FOR HYPOSPADIA WITH FLAPS FORMED FROM THE SCROTUM.

By DOCTOR A. BIDDER, Berlin.

From *Deutsch. Med. Wochenschrift*, March 10th, 1892, No. 10,
Vol. xviii., p. 208.

Translated by Hugh Hamilton, M. Sc., M.D., Harrisburg, Pa.

From the article of Rosenberger (20th *Cong. Deutscher Gesell. für Chirurg.*, 1891) upon his new method of operating for epispadia, I concluded to make use of a similar procedure in hypospadias, because it seemed to me that the lack of the posterior (under) side of the urethra would allow it to be formed far easier out of the scrotum, totally disregarding such bothersome and mostly useless methods as the older operations.

Such a case came to my notice last summer (1891). Although it has not yet been a complete success, from causes which will be fully detailed further on, I would like to give my operation, as I find one of almost exactly similar ideas published by Landerer in the *Deutsch. Zeitschft. für Chirg.*, Hft. 5 and 6, Bd. 32. As a consequence the first part of our operations are identical, while in the second it is a little different. This treatment must have for its object the lifting of the head of the penis out of the skin of the scrotum, where in this case it lies imbedded.

The case is here presented to the profession for their judgment:

CASE.—On the 24th of June, 1891, there was brought to the Polyclinic, Carl Dettmann, aged $3\frac{1}{2}$ years, suffering from *Hypospadia Totalis*, but otherwise healthy. The opening of the urethra was found

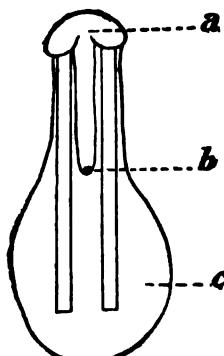


Fig. 1. a, Glans Penis; b, Urinary Orifice; c, Scrotum.

in a wrinkle formed by the penis and scrotum. All the posterior side of the pendulous portion of the penis was absent; it had the well known posteriorly

and inferiorly curved direction. After some delay I concluded to undertake the operation on the 23d of July, 1891, upon the following plan: Upon each side of the posterior surface of the penis and anterior surface of the scrotum long, narrow strips of freshened surfaces were made about 3 to 5 millimeters apart. See Fig. 1. The skin of the scrotum between the longitudinal freshened lines will form the posterior side of the penis. Commencing at the wrinkle, between the penis and the scrotum, I sewed, going little by little toward the glans penis. When I had finished, the penis was sewed fast to the anterior wall of the scrotum—the exterior freshened sides were united by continued sutures. See Fig. 2. The

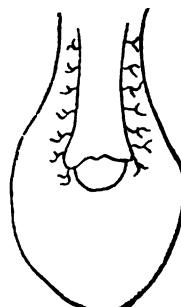


Fig. 2.

operation was exceedingly difficult on account of the imperfect anaesthesia that varied between strong reflexes and asphyxia—a condition not often seen in children—although the best chloral chloroform was used.

Only on the left side did union take place and even then incompletely. The right side failed to join the penis with the scrotum on account of the frequent erections of the sturdy boy. The inflammatory reaction from the swelling of the parts was not particularly noticeable. On the 12th of August I freshened the right side and again sewed it. After that I concluded to perform the second part of the operation—the separation and forming of the fin-

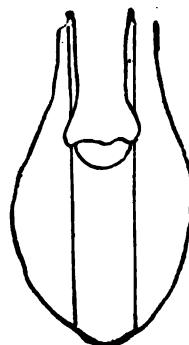


Fig. 3.

ished penis from the scrotum. Beginning at the base of the penis (junction of the penis with the scrotum) two downward parallel incisions were made

about a millimeter on each side of the scars to the back of the scrotum, the parallel lines joining each other at an angle (see Fig. 3); then the skin of the scrotum was detached throughout this extent and the narrow tongue-shaped flap laid on the penis by raising it up (Fig. 4). It was sewed fast on both

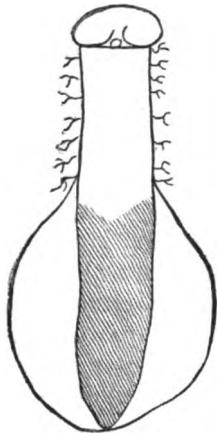


Fig. 4.

sides of the penis and formed the posterior surface of the now movable member. The remaining denuded median surface of the scrotum was readily closed in by 6 or 8 interrupted silk sutures (Fig. 5). Although

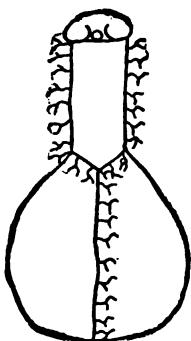


Fig. 5.

after the operation a general œdematous swelling of the scrotum took place and a gangrenous spot appeared at the extreme end of the tongue-shaped flap in the crease between the penis and scrotum—the boy was most uncleanly—nevertheless the scrotal wound healed by the first intention and the little gangrenous spot was naturally restored by granulation. On the first few days after the operation the patient had a complete urethra and could pass a stream of urine, but unfortunately it did not last long, for the suture on the right side gave way, showing a broad slit instead of a canal. However, the boy had some benefit from the operation, as the urine principally flowed along the lower (newly made) urethral wall, and in that way kept the scrotum from being constantly wet. Fig. 6. An adult could have urinated nicely by pressing the ununited parts together with his fingers.

The sutures most likely became undone because I was compelled to perform the second operation three weeks after the first one, which was too soon. Probably it would have been better to have made both

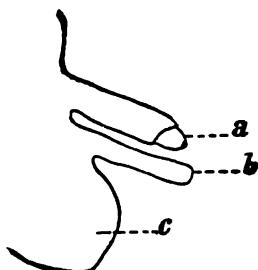


Fig. 6.

operations immediately one after the other, i. e. after forming the plastic floor of the urethra the external posterior surface of the penis should be at once detached and the penis removed from its constrained position as in the preceding description. Further trials will have to prove this supposition.

The condition of the case was such that I had to wait some time before attempting to close the side slit in the penis. By October 14th, 1891, the incisions had generally healed up. The outside flaps on the under surface of the penis formed by the skin of the scrotum joined lightly and were weak and thin, but were a little short at the base on account of the shrinking caused by the scars at the point of contact with the scrotum; there was a hard scab where it had been gangrenous. At this date, with the kindly assistance of Dr. Reinach, (who had skillfully helped me at the earlier operations) I commenced to close the side slit. To make it more successful I slit the anterior half of the left side of the penis until I came to a little hole that had remained, now I separated the flaps and abraded two long surfaces from 2 to 3 millimeters wide on both sides. This time too the anaesthesia was of the greatest annoyance.

Indeed, as you well know, it is a great deal of trouble to operate on such small parts, particularly to denude the skin of the *corpora cavernosa*. It is also difficult to make the internal sutures, as the mucous membrane of the penis is so thin it requires the utmost care to avoid puncturing the swollen part. This time these inside stitches were made with the finest catgut, while those of the edges of wound at the side were of interrupted silk suture. Despite the impediment of the ill behavior of the anaesthetic the operation altogether did not last longer than an hour and one-half. There was no bandage used, only sprinkling with boric acid, thiol and later on iodoform. The process of repair proceeded without any unfavorable reaction and I succeeded in making a canal except a small hole on the left side.

Several remarks can now be made upon this method: *a priori*, it seems not only rational but can be easily done. But, indeed, even the first part of the operation, to successfully unite the inferior surface of the penis with the anterior scrotum presents many difficulties. For the wrinkled very yielding skin of the scrotum must be completely stretched to properly freshen it. If the stretching should not be kept up the abraded strip and the edges will wrinkle up again and seem too short, and the co-apportion rendered so much more troublesome because interfered with by the swelled up parts. Because the outer skin of the penis and scrotum are alike in their elastic properties they are adjusted far more easily. Such difficulties may be lessened by great care in operating and by broader freshened surfaces. In this particular case it was essential to widen the very narrow pathological orifice of the urethra by an incision with scissors from before backward. The inferior periphery of the floor of the urethra was a membrane as thin as paper; it became thicker as one proceeded backward and had the characteristics of the *corpora cavernosa urethra*. This seems to be the rule in these cases.

Whether the hair which came through the operation into the new urethra, after its growth at puberty will create any disturbance is unknown; how it is to be prevented we cannot now say with certainty. However, I do not think that this circumstance should be of importance in not giving to this method of operating a preference. By different modifications of the procedure it may still be greatly improved.

Remarks.—Since writing the above, at the end of October, 1891, I again saw the case on the 30th of January, 1892. The wrinkling caused the penis to be too short on the under side and it was lengthened according to Landerer by two side incisions loosening the scrotal skin, cutting completely through the scar and sinews of the *dartos*. The wound was closed in a sagittal direction with interrupted sutures. The penis is now entirely free. The edges of remaining side defects may at some future time be finally closed by sewing.

It is very certain that all these subsequent operations might have been avoided, had the healing of the scrotum continued onward to complete cure like the first part of the operation.

MASSAGE AND MOBILIZATION IN FRACTURES.

BY DR. KRECKE.

In the author's opinion, the ill effects noticed after the healing of fractures, such as stiffness of joints and atrophy of muscles, are attributable to prolonged immobilization, and may be avoided if the latter is not resorted to. In consequence of this, a movement has

been recently set on foot to treat fractures without the maintenance of a fixed position of rest. The aim of the modern method consists in mobilizing the muscles, ligaments and joints, while the bones are immobilized.

To study this method fractures may be divided in the following groups: First, cases in which there is no displacement of the fragments, or at least, after reduction of the displacement no tendency to its recurrence. Second, cases in which motion and displacement of the fragments is very slight. Third, cases in which there is almost always present displacement and mobility of the fragments, with recurrence of the deformity after reduction has been effected.

In fractures of the first group, such as fractures of the malleoli, the method may be practiced to greatest advantage. If no displacement exists in these cases, a dressing may entirely be dispensed with. If dislocation exists the application of a fixed dressing for a few days is sufficient, and on the fourth or fifth day massage and active movements may be begun. Massage is first confined to movements of stroking the muscles of the leg, and is applied to the place of fracture only after the tenderness has been diminished. After the lapse of fourteen days the patients are able to walk about. In cases of fracture of the lower extremity of the radius, the treatment is more difficult to carry out, as the fragments have a greater tendency to dislocation. After immobilization, lasting for eight days, active movements may be begun, and the duration of treatment is thereby considerably shortened.

In fractures of the second group, *i. e.*, fractures of the ulna, fibula, or epicondyles or tuberosity of the humerus, the method of immobilizing the limb for a short time and then resorting to active movements, has given excellent results.

In the third group of fractures, such as fractures of the femur, humerus, forearm, or leg, the method proved useless. After the dressing was left off, the displacement always returned, so that immobilization was again found necessary. In the author's opinion, in carefully selected cases of fracture, the results of mobilization are much better than those observed from the old method of treatment.—*Centralbl. f. Gesammte Therapie*; July, 1892.

THE INDICATIONS OF THORACOCENTESIS.

BY PROFESSOR POTAIN, PARIS.

The author disputes Verneuil's assertion that thoracocentesis converts a serous into a purulent exudation. He concedes that operations for empyema are more frequent now than in the past, but does not hold thoracocentesis responsible for this and does not

regard empyema as a more common disease than formerly. Thoracocentesis opens to view many purulent exudations, which formerly ran their course unnoticed, but it never produces them, if properly performed.

Four factors must be considered in the performance of thoracocentesis : First, the presence of functional disturbances. Second, the quantity of exuded fluid. Third, the duration of the exudation. Fourth, the nature of the fluid.

Functional Disturbances.—Considerable dyspnoea is an indication for thoracocentesis, because it usually points to the existence of a large quantity of fluid. It may, however, be due to other causes, such as capillary bronchitis, miliary tuberculosis, etc. In such cases the performance of thoracocentesis must hinge upon the question whether the dyspnoea is due to the exudation or the accompanying complications. Dyspnoea, moreover, is an unreliable symptom ; it may be completely absent; even when the quantity of fluid is excessive. The same applies to cyanosis. As regards the tendency to syncope, still less reliance can be placed upon this symptom, because it frequently appears too late to serve as a danger signal. In general, functional disturbances are unreliable signs; but when they occur in a case where positive indications for operative interference exist, they should impel us to make haste. Finally, in exceptional cases, if a careful study of the existing conditions shows that the disturbances are actually the result of the exudation, they may serve as indications for thoracocentesis, even if for other reasons the operation had not been attempted.

Quantity of Fluid. A profuse accumulation of fluid demands thoracocentesis for two reasons: first, because the danger of syncope or asphyxia in general is in direct relation to the quantity of fluid ; second, because the long time required for absorption to take place increases the danger.

The quantity of fluid can be estimated in a general way by determining its upper limit. This, however, is not sufficient; we must also determine the lower border of the diaphragm, the distension of the thoracic walls, the displacement of the mediastinum, and the compression of the lung. As long as the fluid does not reach to the level of the clavicles, the quantity of exudation need not enter into the question of an operation.

If, notwithstanding that the level of the fluid extends to the clavicle, there is no displacement of the diaphragm or mediastinum, no marked distention of the chest, and the lung occupies a considerable space in the thoracic cavity, the operation may be postponed. If, however, the lung is entirely compressed, especially when the thoracic cavity is distended, an immediate operation is indicated.

The Age of the Fluid may become an indication for thoracocentesis, even when the quantity of exudation in the pleura is moderate or slight. The exudation reaccumulates after evacuation if it is recent; on the other hand, late operation is sometimes attended with serious dangers.

The fluid should therefore be removed if no hope exists that it may be absorbed by medicinal treatment. Authors who have written upon this subject, have designated three weeks as the limit. It is a matter of difficulty, however, to positively determine the age of an exudation, inasmuch as the development of the effusion does not always correspond with the beginning of the disease.

The Nature of the Fluid can be determined with certainty by puncture. Without resort to this we deal only with presumptions, but these are sufficient to indicate a puncture, which according to the case may be simply exploratory, or at the same time serve to evacuate the fluid.

After thoracocentesis has been decided upon, it must be determined to what extent the contents of the pleural cavity are to be evacuated. In the majority of cases the complete emptying of the pleural cavity is attended with many grave dangers. On the other hand, the evacuation of a small amount of fluid may be useless if a large exudation be present. As a rule about one-half of the fluid should be removed.

Potain concludes as follows :

1. Thoracocentesis, if performed properly and at the right time, never converts a serous into a purulent exudation.
2. The increase of cases of purulent pleurisy which has been attributed to thoracocentesis, is rather an apparently so, but not an actual fact.
3. The indications may be based upon precise and fixed rules.
4. Thoracocentesis should always be considered as a serious procedure, which should be performed under the necessary precautions.
5. It is as great an error not to resort to the operation as it is to perform it uselessly or improperly.—*Revue de thérap. méd. chirurg.*, June 15, 1892.

A METHOD BETTER THAN SUSPENSION OF APPLYING A PLASTER JACKET.

BY RICHARD BABWELL, F.R.C.S.

The author states that he has for some years past ceased to employ suspension in kyphosis, and has straightened, as far as safety will permit, the patient's spine by a modification of his method of rachilysis, which used differently, has proved successful in lateral curvature; the force—viz.: traction by a system of pulleys—being used while the patient is sitting.

It is thus carried out in a case of dorsal kyphosis: The patient being closed in a skin-tight knitted vest, and with the usual parts padded sits on an ordinary office stool about two feet and a half high, between two opposing walls in which certain hooks, etc., are fixed as for rachilysis. A three-inch wide piece of webbing, with strong cords at each end, is secured to one of the back legs of the stool, and passing over the top of the patient's thigh sufficiently tightly, is also secured to the other back leg. A strip of moderately strong unbleached calico, broad according to the size of the patient, crosses the abdomen on and below the umbilicus. This in the position under consideration is designated "counter-traction band." By means of the cords at each end it is fixed at the proper degree of tension behind. A similar strip of calico passes across the back on a level with the point of greatest curve. This is the "traction band." If the projection be very sharp and angular, it is well to make a slit, lengthwise as regards the belt, two or three inches long, so that one of the laps may lie above, the other below the most prominent vertebra; a cord secured to both ends of this forms the whole into a loop, into which is hitched the hook of the system of pulleys. These two strips of calico would always crumple up and run into ropes as soon as tension comes on them unless prevented, which is easily done by having at hand four slips of common soft wood a little longer than the belts are broad. They are to be placed outside the calico pretty close to the patient's body, one on each side, and into them through the belts, and just at their edges, are thrust surveyor's pins. Lastly, a one inch wide loop of webbing, properly padded, passes across the manubrium sterni under the axilla on each side, and is secured by a cord running through a single pulley at proper tension behind. This is termed the "lanyard." The surgeon begins by making very slight traction by means of the system of pulleys, observing if the tension of his other cords is correct, and places the spine in proper position; if not, it can easily be altered by means of the single pulleys through which the cords run. All being correct he increases the tension, and slips between the laps of both traction and counter-traction bands a board of wood, from ten to twelve inches long, in order to prevent lateral pressure on the thorax and abdomen. He now increases traction up to the desirable point, recollecting that the Astley Cooper system of pulleys multiplies his manual force by six. When as much traction as he may deem safe has been attained, he fixes the pulley cord by twisting or knotting it to the loop of the traction belt, thus causing the spine to be immobile during application of the jacket.

As this sitting position and slight restraint are

either not at all or very little fatiguing to the patient, the next procedure need not be hurried. Moreover, in order to insure greater hardness and durability to the jacket, some colloid may advantageously be mixed with the water in which the bandages are soaked. The best and most convenient material, in the author's opinion, is liquid glue. About a teaspoonful to the quart of water causes the plaster to set very firm and hard in from twenty minutes to half an hour, according to the warmth of the room. In winding on the bandages those parts of the traction and counter-traction belts which lie close and tight to the patient's body must be included and covered in the turns; those parts which project and stand away from the trunk are left out. By putting on the bandages, not straight, but somewhat obliquely, the chest and abdomen may be covered, with the exception of some little triangular spaces lying under the shelter of the projecting parts; these are afterwards dealt with.

When the plaster has become firm, the traction should be slowly relaxed and the calico belts cut away about three inches from the trunk, and any little roughness in the angle where they begin to project removed. Then the triangular interspaces should be wetted and covered with plaster soaked in the gluey water. The calico lappers (the three inches not cut away) are then laid over the newly applied plaster and covered by rubbing into them the same material.

If the surgeon has to deal with a dorso-lumbar, or with simply a lumbar kyphosis, the lower belt becomes the traction band, passes to the front, and is attached to the pulleys; the upper belt is then the counter-traction band, passing across the front of the chest as high up as one wishes, and is secured behind. No lanyard is required.—*Lancet.*

SKIN TRANSPLANTATION AFTER THIERSCH.

BY DR. URBAN.

In an interesting paper based upon his studies at Thiersch's clinic, the author states that this method of transplantation is always successful if properly carried out. He believes that fresh wounds demand no previous preparation, but that defects covered with granulations should not be grafted upon until the secretion and tendency to bleeding have been reduced to a minimum and all signs of inflammation of the surrounding parts have disappeared. The granulations should either be curetted or removed with the knife. The skin grafts should be excised in as thin a layer as possible; to obtain good results it is absolutely necessary to cover the defect with grafts arranged like the shingles of a roof. The entire surface of the wound should be covered, so that not a single raw place is exposed.

The skin is usually taken from the thigh of the patient. As regards the dressing, the transplanted skin is first covered with a layer of protective, over which are placed compresses moistened with a solution of sodium chloride. The dressing is changed daily during the first seven days. If the grafts are found firmly adherent at the end of twenty-four hours, no failure need be apprehended. If a piece of skin has been displaced and a raw surface is exposed, another graft is taken from the thigh, and applied without previous preparation to the defect.

As regards the final results, the author remarks that if the transplantation has been carefully carried out, the contraction of the surface is so slight that it need scarcely be considered. He reports 350 cases operated upon during the last five years. These comprise burns, injuries, new-growths, defects after plastic operations, nævus, contractures and cicatrices, defects after operations for necrosis of bones, lupus and leg ulcers.—*Centralbl. f. d. gesammte Therapie*, July, 1892.

THE TREATMENT OF URETERAL FISTULA.

BY DR. ARIE GEYL.

The author reports the following case, which he uses as a text for some remarks on the treatment of fistulæ of the ureters. The patient, a female aged 33, first suffered from urinary trouble after the birth of her fourth child, delivery being protracted and necessitating the application of the forceps. Since that time all urine was passed through the vagina and there was incontinence of feces.

An examination disclosed the presence of a uretero-vaginal fistula on the left side, a uretero-uterine fistula on the right side, a double laceration of the cervix and complete rupture of the perineal septum.

The uretero-vaginal fistula was first operated upon, an artificial vesico-vaginal fistula being established, the termination of which was situated close to the already existing ureteral fistula; for this purpose the incision was prolonged as far as the latter and had a length of two centimetres. The incision was made upon a sound which was introduced into the bladder, after previous injection of boric acid solution, so that its point impinged upon a Pawlik's catheter which was passed for a distance of five or six centimetres into the ureter.

An S-shaped curved thin catheter was then introduced through the urethra and bladder into the ureter, and two strips of mucous membrane were excised, the incision beginning at a point of the vesico-vaginal wound removed one-half centimetre from the

terminal portion situated in the proximity of the fistulous opening. The mucous strips surrounded the fistula in the direction of the vesical wound, from one to one and one-half centimetres of intact vaginal mucous membrane intervening between them and the fistula.

The ureteral orifice having been thus forced into the bladder, sutures were applied. The exposed mucous surfaces were united by a line of sutures, which also coapted that part of the vesico-vaginal wound situated behind these surfaces. Ten days later the stitches were removed, the fistula having healed and the bladder having regained its full capacity.

Various attempts were made to cure the utero-ureteral fistula. For this purpose Geyl dilated the uterus, and to render the fistulous opening more accessible he amputated the corresponding half of the cervix. As these efforts, however, proved useless, and the patient refused to submit to extirpation of the kidney, nothing further was done.—*Sammlung Klin. Vortrage*, No. 37, 1892.—*Centralbl. f. d. gesammte Therapie*.

Treatment of Uncomplicated Fractures of the Lower End of the Humerus.—In a paper read before the American Surgical Association, May 31, 1892, Dr. John R. Roberts, of Philadelphia, laid down the following conclusions:

Humerus.—1. In the treatment of fractures of the lower end of the humerus, the divergent angle between the axes of the arm and forearm must be preserved; and hence, dressings which interfere with the normal difference in level of the radius and ulna are not permissible.

2. Fractures of the lower end of the humerus of ordinary severity, are, as a rule, more successfully treated in the extended than in the flexed position.

3. Because the "carrying function" is less liable to be impaired.

4. Passive motion at an early date is harmful, and should be deferred until union has occurred and the dressings have been finally removed.

5. Good results as to anatomical conformation and as to motion are generally to be expected, and can usually be obtained.

6. Recent fractures in which satisfactory coaptation is not obtainable under anaesthesia may with propriety be subjected to exploratory aseptic incisions. Old fractures, in which deformity and impairment of function are marked, may, within certain limitations, be subjected to refracture or osteotomy for the relief of these conditions.—*Jour. of the Americ. Medic. Assoc.*

THE STRAIGHT TUBE THE SIMPLEST CATHETER.

Ziegenspeck (*Centralblatt für Gynakologie*, April 23, 1892), states that Wolfner recommends a simple straight tube for the female bladder. His reasons are :

1. The conical end is more easily arrested in folds of the mucous membrane and leads to false passages.

2. The catheter with side openings is more difficult to disinfect.

3. The catheter with the blind ends and side openings, has a lost space which it compels us to insert and prevents the walls of the bladder lying upon one another, when it is emptied ; also the lost space conveys air into the bladder.

4. By swelling of the mucous membrane, or spasm of the muscular coats, the mucous membrane is pressed into the eye of the catheter, making its withdrawal difficult.

5. Foreign bodies, as sand, mucus, etc., pass with more difficulty through the indirect passage afforded by the opening on the side.

Kustner, in 1890, suggested glass as the best material for the tube. His catheters measured 10 cm. and were cut obliquely on one end.

Ziegenspeck recommends the Kustner instrument which possesses all the advantages of Wolfner's, and is easier to clean. The obliquely cut end affords a larger opening, and consequently easier emptying of foreign masses. In healthy bladders he does not advise the use of obliquely cut tubes. He thinks a slight curve to Kustner's glass tube would facilitate its passage in some cases, and would not interfere with the ease of cleansing it. Glass, he thinks is the best material for these tubes, as it can be easily bent, its transparency enables any uncleanliness of the instrument to be detected, and it can be sterilized by heat.

In washing out the bladder, a rubber tube is attached to the outer end, by which the nozzle of a syringe may be connected, the bladder filled and the fluid allowed to run out. The advantages of this over the double-current catheter consists in the fact that the bladder is stimulated to contract, whereby the antiseptic solution finds its way deeper in the tissues; that air-bubbles are not passed into the bladder along with the injecting fluid; its simplicity and cheapness; the readiness with which it can be improvised.

In washing out the female bladder, at times he introduces the glass tube while the injecting fluid is streaming through. The fluid returns along the side of the catheter. His method of preparing his catheters consists in cutting glass tubing in pieces 10 to 12 cm. long, and melting the cut ends in the flame of a spirit-lamp until well rounded.—*University Medic. Magazine.*

Surgical Memoranda.

The Ecraseur in Tongue Operations.—Dr. Jonathan Hutchinson recommends the use of the cold ecraseur wire, considering it much safer than the knife and scissors. It prevents loss of blood, and this is of great importance in the case of old and feeble persons who are often the subject of these operations. For many years the author has not employed any other instrument, and with one exception, has never lost a single patient. The division of the tongue is always accomplished without any bleeding, but after it is complete he always seeks for the lingual arteries and tries to provoke them to bleed in order to tie them. The bleeding of the linguals is always very feeble, just sufficient to reveal the artery and no more. It never involves any risk of blood passing back into the throat. The author always uses a cold iron wire and cuts very slowly, taking at least half an hour to the procedure. As regards the place of election, he operated well behind the disease, and by no means regards it as essential to remove the whole tongue. If the disease is on one side, the line of section crosses the tongue obliquely. There is no inconvenience as regards subsequent speech from these oblique divisions, and the stump left by them is preferable to that resulting from the removal of one longitudinal half of the organ. One great advantage which attaches to the ecraseur is that operations by its aid require patience only to be successful. They may be performed by any one at any time, and the operator is but little dependent upon his assistants. This is an advantage not to be despised when we remember that the circumstances under which cases of cancer of the tongue first come under surgical observation are often such as do not permit of immediate recourse to a hospital or to a surgeon of special experience in such cases. Were operations of this kind less formidable in the general estimation of the profession, they would often be performed at much earlier periods.—*Annals of Surgery.*

Pyoctanin in Malignant Tumors.—At the French Surgical Congress, April 20, 1892, Dr. Nanu related his experience with pyoctanin in 25 cases of epithelioma and carcinoma. Solutions of the strength of 1-100 were injected daily in quantities of 5 to 12 grammes for several weeks. In some cases improvement ensued, consisting in decrease of pain, disappearance of the suppuration and fetid odor, while in others a cure was obtained. The injected pyoctanin produces necrosis of the cancerous tissues, probably by giving rise to thrombosis. It has the advantage over caustics of exerting no effect upon the healthy parts.—*Wien. Medizin. Wochenschr.*

Resection of the Liver.—Dr. W. Keen, of Philadelphia, reports the case of a woman in which he removed a multiple cystic tumor of the liver. The attachment of the growth to the liver was divided with the thermo-cautery, but as the cysts extended deeply into the liver substance, they were enucleated with the thumb nail. The liver stump resembled that of an amputation with two flaps. It was burned with the thermo-cautery and then the two flaps were united by five deep sutures. Although four large veins were ligated, the hemorrhage was slight. A drainage tube was inserted after the abdominal cavity had been flushed with hot water, and was removed in forty-eight hours. The patient made a good recovery. Dr. Keen's conclusions, based upon his own and other cases are as follows:

Both experiments on animals and operations on man have shown that tumors of the liver, and even large portions of the liver itself, can be removed without undue disturbance of the function of this organ; the experimental evidence makes it probable that the liver-tissue may be regenerated and the loss made good.

The escape of bile into the peritoneal cavity is not a usual phenomenon after such an operation; it may generally be prevented by searing the raw surface of the liver, by ligation, or by securing the stump in the abdominal wound. Even if the bile enters the peritoneal cavity, the result is not necessarily fatal.

Hemorrhage need not be greatly feared. The vessels can often be tied separately or in mass, or cut through by the cautery, or controlled by pressure, or by a combination of these means.

Resection or amputation is best done by enucleation, by the cautery, or by the knife or scissors, preferably, perhaps, in the order named. In case of a tumor with a very large base of attachment, the operation may be done in two stages, the base being surrounded by an elastic ligature in the interval.

The mortality thus far has been only about ten per cent.—*Boston Med. and Surg. Journal.*

while if it is larger, it is difficult to introduce into the ureteral opening. As the eye of Pawlik's catheter would frequently catch and cut the mucous membrane of the urethra, the author has replaced this by several perforations in a little gutter counter-sunk on the concave side of the shaft near the point of his instrument. The opposite end of the catheter at the handle is provided with a lip curving downward to facilitate the discharge and collection of urine in a finely graduated tube. During the introduction of the catheter this end of the tube is plugged with a short metal rod, otherwise the urine would continually escape from the bladder while the orifice of the ureter was being sought. This little rod is attached by a fine chain to the catheter to prevent its being lost. A fixed metal handle is placed four centimetres from the end of the instrument, six centimetres in circumference, and flattened on the side toward which the point is directed.—*American Journ. of Obstetrics*, June, 1892.

Extirpation of Cerebral Tumors.—Dr. Von Bramann reported two cases at the German Surgical Congress, June 10, 1892. The first patient had sustained a violent blow against the head one and a half years before. Some time after, weakness of the first three fingers of the left hand, then of the left arm and paralysis of the left half of the face developed, with spasmodic contraction of the paralyzed parts. A diagnosis of tumor in the region of the posterior central fissure was made. This area of the brain was exposed by removal of a portion of bone measuring six centimetres with the chisel. A bluish tumor was found which, on incision, proved to be a cyst. About 30 grammes of a clear serous fluid were evacuated, and a drain inserted. The wound healed without reaction and the paralysis subsided. Three weeks later, however, the attacks recurred, and a second operation was undertaken which disclosed a cystic tumor which was drained. As the attacks again appeared a third operation was performed and the tumor, a round-celled sarcoma, was completely removed. At the time of the report the patient had not had an attack for three months. The second patient also received a blow against the head and some time after suffered from weakness in the left hand, severe headache, impairment of sight and memory, with gradually developing paralysis of the entire left arm, face, and choked disc. A tumor of the central convolution was diagnosed, and this diagnosis was confirmed by the operation. The tumor was a spindle-celled sarcoma of the size of a small fist, and was readily extirpated. Recovery was not complete owing to the persistence of some focal symptoms.—*Wien. Medizin. Wochenschr.*, No. 28, 1892.

The Ureteral Catheter.—Dr. Howard A. Kelly, of Baltimore, believes that this instrument should form a part of the regular armamentarium of the gynecologist. The catheter which he employs is a modification of Pawlik's instrument. It consists of a slender metal tube, 30 centimetres in length and 2 millimetres in diameter. At the end which is introduced into the ureter it is slightly curved for two centimetres, and terminates in an olive-shaped point $1\frac{1}{2}$ millimetres in diameter. Any further diminution of the size of this point renders it liable to pierce the bladder in the attempt to catheterize the ureter,

Contribution to the Treatment of Epididymitis without Restriction of Exercise, with a Sketch of a Simple Bandage.—Philippson (*Therapeutische Monatshefte*, April, 1892) describes a new treatment of epididymitis which allows the patient perfect freedom to go about. The principles of his treatment are:

1. Compression of the testicle, which causes the inflammatory swelling rapidly to disappear.

2. Puncture of the tunica vaginalis. Sometimes compression alone is indicated, while in other cases puncture and compression may be necessary.

As a dressing iodide of lead plaster was first tried, but this had the disadvantage of producing excoriations. He then used suspensors. It was found difficult to get two alike, and they were rather difficult to adjust. One of two methods of compression by means of bandages may be used:

1. Two flannel bandages, quite elastic, and two circles—one of flannel and the other of gutta-percha. One bandage first draws down the testicle from the inguinal canal. The two circles are then placed underneath the testicle and covered by succeeding turns.

This method often produces unbearable pain.

The author recommends the following:

2. A flannel bandage, three metres long and three centimetres wide is used, the first turn being applied above the testicle. This end of the bandage he allows the patient to hold until the following circular turns are firm enough to hold it and prevent the testicle from slipping up towards the inguinal canal. The dressing is then completed by alternate circular and spiral turns of the bandage, and the two ends fastened together with a safety pin, and the whole surrounded with a suspensory bandage. This dressing may be reapplied daily.—*University Medic. Magazine*.

Ganglion and Inflammation of Tendon Sheaths.—Dr. C. S. Evans, of Cincinnati, regards subcutaneous puncture or forcible rupture as only palliative means of treating these affections, as the ganglia thus treated are sure to return. Subcutaneous puncture has the advantages over rupturing by a blow of being much less brusque, and just as sure, while its dangers are exceedingly small if it is performed under antiseptic precautions. It should, however, be borne in mind in cases of ganglia situated on the palmar surface of the wrist that, owing to their proximity to the radial artery, subcutaneous puncture might easily lead to a wound of the artery and the formation of a traumatic aneurism. The author thinks that although electrolysis of these

tumors has been but little used, they are conveniently situated and adapted to this method of treatment. Extirpation, which has of late years grown much in favor, must be performed under the strictest antiseptic precautions. Dr. Evans says that it can only be advised, conscientiously, for those cases which stubbornly recur after treatment by other methods, or those which have some especial symptoms, pain, tenderness, etc., which seriously interfere with the following of the vocation of the person so affected. It is also to be recommended for those ganglia which lie in close connection with the radial artery.—*Amer. Journ. of Med. Sciences*.

The Treatment of Varices of the Lower Extremities.—Dr. Prawdoljubow (*Bolnitschnaja Gazetta Botkina*) has treated a number of cases by Trendelenburg's method, which consists of excision of a piece of the great saphena vein after previous double ligation. He employed this treatment in three cases of varices, eight cases of varicose ulcer of the leg, and one case of hemorrhage from a ruptured varix. The operation was performed under cocaine anaesthesia and the wounds healed by first intention. The results were excellent. In eight cases the varices disappeared completely; in four cases they were scarcely noticeable. The pains and feeling of weight in the extremities were entirely relieved, the ulcers cicatrized rapidly; oedema was no longer observed after the operation. Recovery has persisted in all the cases.—*Oest. ungar. Centralbl. f. d. Med. Wissenschaften*.

Effect of Ice Bags in Amputation.—Dr. J. Shaud reports two cases illustrating the advantages of ice in amputation cases, in both of which the wounds healed by first intention. He has also used cold water dressings after operations for shattered hand (all caused by gunpowder explosions during the shooting season) with very satisfactory results. In his opinion the ice dressing acts as an excellent haemostatic and antiseptic.—*Edinburgh Medical Journal*.

Antiseptic Mixture.—On the ground of experiments made at Pasteur's Laboratory, Dr. J. de Christmas finds that the following mixture possesses very effective germicidal powers: acid carbolic, 9.0, acid salicylic 1.0, acid lactic, 2.0, menthol, 0.1. The three acids are heated until they become fluid and then mixed. This mixture is very soluble in glycerine and in water to the extent of 4 per cent. Its germicidal power is said to be greater than that of carbolic or salicylic acids.—*Wien. Medizin. Wochenschr.*, No. 26, 1892.

A New Form of Application of Lactic Acid.—In his service at the Hamburg General Hospital, Dr. Zippel has observed some excellent results from the use of lactic acid in various forms of tuberculosis. Especially favorable effects were obtained from the application of gauze tampons soaked in the acid. For the purpose of exerting a more continuous action upon tuberculous fistula Zippell experimented with lactic acid made up in the form of rods. Great difficulties were encountered in the attempt to prepare a paste having the proper consistence, that of an elastic bougie, on account of the hygroscopic character of lactic acid, in consequence of which the rods became soft and sticky. This was obviated in the following manner: The paste which consists of gelatine, lactic acid and water, aa 50 grams, is rendered fluid by slightly heating, and then menthol 30 grams is added. It is then poured out in form of rods and preserved in an ice box for twenty-four hours. The rods are then dried in an exsiccator (a tin box having a double perforated bottom) over chloride of calcium, and in from eight to ten days have usually acquired the requisite consistence, containing about forty per cent. of lactic acid. They are then covered with a layer of collodium and can be well preserved in this form. Before introduction of the rod into the fistula the point is cut off obliquely. This is done in order that the paste may undergo solution from the point, and thus act, first of all, upon the deeper parts of the fistula. The collodium envelope may be removed in a few days as an empty sac. In place of collodium the bougies may be preserved in oil or benzine to which 30 per cent. menthol has been added. The addition of menthol diminishes the pain experienced from the lactic acid application. If the gelatine in the paste is replaced by starch and tragacanth, the rods become less elastic, but harder.—*Centralbl. f. Chirurgie*, No. 10, 1892.

Operations upon the Gall Bladder.—In a paper read before the French Surgical Congress, Dr. Terrier reported eight cases of cholecystectomy, with seven complete recoveries and one death. Of his cholecystotomies three cases recovered, among them a child twelve years of age, whose bile contained micro-organisms. One case terminated fatally from peritonitis. He performed cholecystenterostomy in a case of tumor of the head of the pancreas, the patient dying six months after the operation. Léonté reported two cases of cholecystotomy, in one of which the bladder was extirpated later on account of persistence of the fistula. Richelot has performed cholecystenterostomy without permanent success. Chole-

cystotomy was done at a later period and the patient died of hemorrhage from the hepatic artery. Duret opened the abdomen in the case of a very obese woman who had suffered for six years from abdominal pains; and finding a sclerosis of the gall bladder owing to the presence of calculi, he performed cholecystotomy with success.

The Management of Gangrenous Hernia.—Dr. Herbert L. Burrell concludes that questionable gangrenous hernia should be treated either extra-peritoneally or by immediate intestinal resection. Whether to treat a gangrenous hernia extra-peritoneally or by resection must depend entirely upon the individual case, and the following factors should be considered: (a) The general condition of the patient. (b) The age of the patient. (c) The length of time the hernia has been constricted. [This in relation to the probable time at which the intestine will give way, and the extravasation of faeces takes place]. (d) The circumstances under which the operation is performed, whether the surgeon is ably assisted. (e) The portion and amount of intestine involved; for in some instances where an artificial anus is established high up in the intestinal track the patient is practically starved to death. The management of a gangrenous hernia requires prompt and accurate judgment, founded on a large experience, and it is only by carefully formulating our ideas that we can meet the emergency with intelligence.—*Boston Med. and Surg. Journ.*, No. 9, 1892.

The Treatment of Hydatid Cysts.—Dr. Bouilly divides the methods of treatment into two classes: 1, incision and 2, combined puncture and injection of sublimate solution. Cysts containing daughter cysts and little fluid, cysts which are confined to some particular organ, and cysts which are suppurating should be incised. Simple cysts containing considerable quantities of clear fluid should be punctured and injected. The technique of Bacilli's method of sublimate injection may be modified as follows: After drying the cavity of the cyst, five grammes of Van Swieten's solution are injected and allowed to remain.—*Wien. Medicin. Wochenschr.*

Radical Cure of Ranula.—Félizet recommends that the ranula be laid open by an incision through the mucous membrane. After the fluid has been evacuated, the cavity is packed with pieces of sponge, and then the entire cyst can be enucleated without difficulty.—*Centralbl. f. Chirurgie*, No. 10, 1892.

Antiseptic Memoranda.

What Becomes of Pathogenic Microbes in the Dead Body.—Dr. von Esmarch has made a series of experiments to settle this question. The investigations were made on mice, guinea-pigs and rabbits, which suffered from septicaemia, anthrax, cholera, malignant oedema, tuberculosis, tetanus and typhus. The cadavers were either buried in the ground or preserved in air or water. The pathogenic bacteria were destroyed in every instance within a longer or shorter time. Their destruction was especially rapid where decomposition had taken place. Pathogenic microbes may, however, be destroyed without the agency of bacteria of decomposition, probably in consequence of lack of oxygen.—*Zeitsch. f. d. Hygiene*, Bd. 7.

Examination of the Blood for Gonococci.—According to L. Jullien, gonococci are found in the blood not only in cases of gonorrhœa, which are complicated by rheumatic affections, but also in those which are complicated by cystitis and orchitis. This view has been disputed by Welander, Aubert, Roux, and others. F. Trapesnikoff (*Medycina*, 1892) has examined the blood in thirty-two cases where gonococci were present in the discharge, the gonorrhœa being complicated by epididymitis, orchitis, cystitis, prostatitis, arthritis and paraplegia. He failed, however, to find gonococci. His conclusions are as follows:

1. In cases of gonorrhœa, where the complications mentioned by Jullien were present, no gonococci occurred in the blood.
2. Without denying the possibility of gonococci entering the blood, their presence can be much less frequently determined microscopically than Jullien has stated.
3. The presence of gonococci in the pus in gonorrhœal arthritis and other complicating affections may be due to the entrance of microbes in the lymph channels.
4. In cases where the direct action of gonococci cannot be demonstrated, the complications of gonorrhœa are brought about either by the extension of the inflammatory process *per continuatem* or through the agency of toxines.
5. The constant occurrence of gonococci in pus cells and leucocytes is not available in the differential diagnosis of this microbe.—*Oest. ungar. Centralbl f. d. medicin. Wissenschaft*.

Correspondence.

EPILEPTIC SEIZURES TREATED BY COMPRESSING THE CAROTID ARTERIES.

Editor, INTERNATIONAL JOURNAL OF SURGERY.

In your journal of June last, I saw a case reported of the above, by John H. Jamar, M. D., and as he thought the subject worthy of further consideration, I would refer your readers to Fagge's *Practice of Medicine*, vol. 1, page 712, where he refers to the practice of compression of the carotids as far back as the close of the last century, as follows:

"Even when an epileptic attack has fully developed itself, there is evidence that it may sometimes be cut short by compression of the carotid artery in the neck. This procedure must be supposed to diminish to some extent the blood supply to the brain. It was first suggested by Dr. Parry, of Bath, toward the end of the last century. He related a case in which it proved successful. A man, who had been liable to epilepsy for two years, was one day beginning to have a fit; his eyes were assuming a vacant stare, and convulsions were beginning about his throat, when Dr. Parry made strong pressure over the right carotid artery. Upon this the convulsions ceased, and the attack proceeded no further. He instructed the patient how to compress the vessel, and the latter afterward assured him that when he had sufficient warning he was often able to prevent the epileptic paroxysm. At Guy's Hospital I have often seen this practice adopted by Mr. Stocker, and sometimes with striking results. I think, however, that it has been especially useful in cases in which there was a strong hysterical element; and I have never been able to satisfy myself that the success which has now and then attended it has really been due to arrest of the flow of blood through the carotid artery. The plan which Mr. Stocker used to adopt was to press both thumbs into the neck, one on each side, toward the spine. In doing so he, doubtless, compressed many other parts besides the carotid arteries, and the pain which he must have caused may well be supposed to have been concerned in the rapid restoration of the patient to consciousness, at least when the case was of an hysterical character."

STEPHEN LAUBACH, M.D.

EASTON, Pa., June 8, 1892.

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Editorial Department.

NEW YORK, SEPTEMBER, 1892.

THE NECESSITY FOR A NATIONAL BACTERIOLOGICAL INSTITUTE.

Trials oft are blessings in disguise, and the visit of that dread Eastern immigrant, the cholera, to our shores, may be at last of good and not of evil import. It may remind us forcibly of that solidarity of the nations which our isolated position but too often leads us to forget; it may stimulate us to take some fitting share in the great works of international polity from which we have too long held aloof.

The epidemic scourges of mankind, the contagia by which man slaughters his fellow, have been stimulated in no slight degree by that ever increasing facility and rapidity of inter-communication which forms so essential a part of our modern civilization. Columbus's momentous voyage, which linked two worlds, possibly gave to the Eastern one the dread gift of syphilis.

Five hundred miles a day on water; a thousand miles a day on land; this is the pace that mankind's efforts enable those poisons to attain. And thus the outbreak of a contagious disease in Persia or Eastern Russia is more to be dreaded to-day than was a similar epidemic not a hundred miles from our portals a century ago.

Hence arises the necessity for systematic and concerted efforts to combat the rapid travelling of disease

germs and to save mankind, as far as possible, from the effects of this incident of civilization. The older nations have long recognized their responsibility in the matter. Health boards, medical supervision of travel, quarantine regulations, have long been the subjects of State care and regulation. And we have of late endeavored, with no small success, to follow in their footsteps. But in another and equally important place we have done nothing; we have sat idly by with folded hands, content to let others work for us, or to leave the work undone. The investigation of the contagia, the study of their characteristics, the search for the best means of destroying them or limiting their ravages; this work we have taken no share in. It is wrong to say that this matter is technical—not purely practical, or to enquire whether the research of contagia, which has been the scientific glory of the last decades, has, as yet, given tangible results. Galvani's experiments with frogs legs, and Volto's pile of metals opened a field sterile for decades—as far as practical results were concerned; but a field which, ardently cultivated, has given us the telegraph and electric power, and shall give us things as yet undreamed of. All knowledge is power. The work done on the comma bacillus may not yet have enabled us to save a single case of cholera that would otherwise have died. But who can doubt that it is the beginning of a new era in the relations of mankind to the scourge?

It is time that we took a place in this great work that is worthy of our position among the nations. Epidemics like the present demonstrate the importance to mankind of these things above all others; far above many things to which the community devotes its energies. Individual effort is hopeless; concerted effort can do everything.

A central laboratory should be established by the Government equipped with all the modern appliances for the experimental study of contagia, with experiment stations, and with a staff large enough to cover the whole ground and paid well enough to secure the most efficient services. Finally, and above all, such an institution must be entirely free from the taint of politics. The Imperial "Gesundheitsamt," at Berlin, which is conducted by Professor Koch, may well serve as a model of what a modern civilized government should do in this direction. There are, to be sure, a number of laboratories either private or connected with the medical schools, but the workers there are almost invariably men who depend upon

active practice or teaching for a livelihood, and who pursue bacteriological research as amateurs. The entire time and all the energies of the best men are requisite for this work. Only the Government can guarantee these conditions.

Only the Government has the force at hand to investigate contagious diseases; and on the Government, representing the entire community, the duty devolves. Systematic and careful work in the investigation of human and animal plagues; work done on the largest scale and with the facilities that only the Government can supply; this is far more important to the sixty millions of this community than petty trade and boundary disputes.—*Salus supremum jus!*

THE TREATMENT OF RUPTURED TUBAL PREGNANCY.

Within the last few years our ideas regarding the pathology and treatment of extra-uterine pregnancy have undergone considerable change. Contrary to what was formerly taught, we know now that the tubal variety of extra-uterine pregnancy far exceeds the others in frequency, that rupture of the tube does not necessarily take place during the first three months, and that the foetus may sometimes be retained in the tube until it has reached its full development. We have also learned to diagnose these cases at an earlier period, and thus avail ourselves with a greater share of success of surgical interference. In the *Berliner Klinische Wochenschrift*, Professor Gusserow has recently published the results of his large and valuable experience. His paper is chiefly devoted to the discussion of cases of ruptured tubal pregnancy where prompt surgical intervention was the means of saving human life, even after hemorrhage into the free abdominal cavity had occurred. Among the twenty cases reported there were thirteen in which the symptoms of internal hemorrhage developed suddenly, and seven in which collapse was preceded by signs of haematocele. The diagnosis in none of these cases was difficult. The sudden occurrence of syncope and symptoms pointing to internal hemorrhage (rapid and feeble pulse, dyspnoea, cold extremities, etc.), in a previously healthy woman who presents subjective or objective signs of pregnancy, is sufficiently characteristic of this condition. But even if the hemorrhage be due to other causes than a ruptured tube, the author urges the immediate performance of abdominal section and a careful search for the source of the bleeding as the best means of saving the life of the patient. Among the thirteen cases in which the rupture was ushered in by symptoms of primary internal hemorrhage and

in which the patient was more or less in a dying condition at the time of operation, there were two deaths; but these could not be justly attributed to the laparotomy; one patient succumbed to old kidney trouble, thirty days after operation, the other to delay in operating. In all these cases symptoms pointing more or less to pregnancy were present, and in eleven the symptoms of extra-uterine foetation had existed for some time before rupture, such as frequent attacks of colicky pains, slight uterine hemorrhages, syncopal paroxysms, etc. Discharge of shreds of decidual membrane, which has been regarded by some of much diagnostic importance, could not be positively determined in any of the cases. In eight cases the foetus was found during operation, in five chorionic villi were detected by microscopical examination. The seven other cases reported by the author belonged to a distinct class of relatively rare occurrence. Characteristic symptoms of haematocele (retro-uterine) were present for some days before the occurrence of internal hemorrhage, which was evidently due to rupture of the bloodvessels in the walls of the cyst. Laparotomy was the means of saving six of the patients, the seventh was in a hopeless condition before operation, which was undertaken as a *dernier resort*.

The author's brilliant results are in themselves a strong argument in favor of the prompt operative treatment of these cases. Of course, the success of surgical intervention, leaving out of consideration the skill of the operator must depend, to a great extent, upon the condition of the patient at the time of operation and the strict observance of antiseptic and aseptic methods. Inasmuch as the details necessary for a rapid and aseptic laparotomy can seldom be secured in private practice, the author advises immediate removal of the patient to a hospital, believing that the dangers of transportation are more than counterbalanced by the benefits received. It is certain, however, that this suggestion will seldom be adopted by the physician and family of a patient in so desperate a condition.

A very full programme is announced for the coming meeting of the American Electro-Therapeutic Association which is to be held in New York, at the Academy of Medicine, 17 West 43d Street, October 4th, 5th and 6th.

There will be two interesting discussions; one upon "The Relative Foeticidal Value of the different Currents and their Application to Ectopic Gestation," to be discussed by many prominent gynecologists and electricians, and another upon "Cataphoresis and its Practical Application as a Therapeutic Measure."

Original Articles.

THE RUBBER BULB AS AN AID IN INTESTINAL RESECTION.

BY FRANCIS REDER, M. D.

*Surgeon in the Relief Corps of the C. B. & Q. R. R. System,
Headquarters at Hannibal, Mo.*

An inflated bulb introduced into the lumina of a resected bowel to facilitate proper coaptation of the wound margins, simplifies the subsequent suturing of the gut, but it might appear as though this procedure would render such a delicate operation a more difficult one.

A study, however, of this instrument, when in position, will be sufficiently convincing that with its aid the operation cannot only be performed with less difficulty, but more neatly, and within less time and with less assistance, than similar operations that have been performed by ordinary methods.

In all operations, and especially in operative procedures upon the abdominal viscera, it is very necessary that the field of operation should be easy of access, with a proper exposure of the part to be operated upon. The use of as few instruments as possible, so that the movements of the operator may not be unnecessarily impeded, is to be advised.

An operation properly performed upon the intestine is always smooth and clean. Beyond the severing of the canal there is no danger of otherwise wounding any important structures. The hemorrhage that ensues is never profuse, and is easily controlled.

confused unnecessarily. Simplify the operation as much as your judgment will permit. Bear in mind that he who has acquired that wonderful qualification called "delicacy of touch," is most apt to be rewarded by the best results. There is as much difference between an intestinal operation and an amputation, as there is between a reduction of a dislocation and the setting of a fracture.

The "inflated bulb," upon which the interest of this paper is based, is placed in the hands of the surgeon as an instrument to assist him in his labors, with the possibility of increasing the success of such delicate operations. The appliance consists of a bulb and a stem made of soft rubber. There are three different sizes, adapted for the large and small intestines. The only difference as to the size is found in the transverse diameter, the long diameter remaining the same. Size No. 1 consists of a bulb made of the softest rubber, in thickness equal to the "toy balloon" rubber. It has a length of four and one-half inches, with a uniform diameter of one inch, allowing an inflation to a maximum diameter of one and one-half inches. The ends of this bulb are bluntly pointed to permit of easy introduction. In the center of the bulb a tube eight inches long is attached. This tube is made of rubber equal in thickness to that of a small drainage tube, and has a diameter of one-eighth of an inch. Size No. 2 has a diameter of two inches, allowing inflation to a maximum diameter of two and one-half inches. Size No. 3 has a diameter of two and one-half inches, allowing inflation to a maximum diameter of three inches.

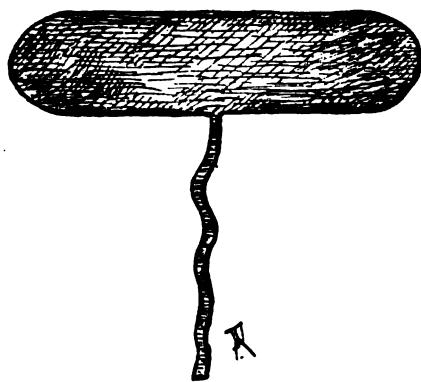


Fig. 1.—Size No. 1 Bulb before inflation. One-half actual size.

It is the manipulation and wounding of a very vital part of the body that causes the alarm as to the patient's subsequent progress. This reason is sufficient to demand that the operation be performed quickly and neatly, with as little handling and exposure of the gut as possible, as this adds to the shock and increases the danger of exciting peritonitis. Work with as few instruments upon the tissues of the bowel as practicable. Do not squeeze or cause the gut to become

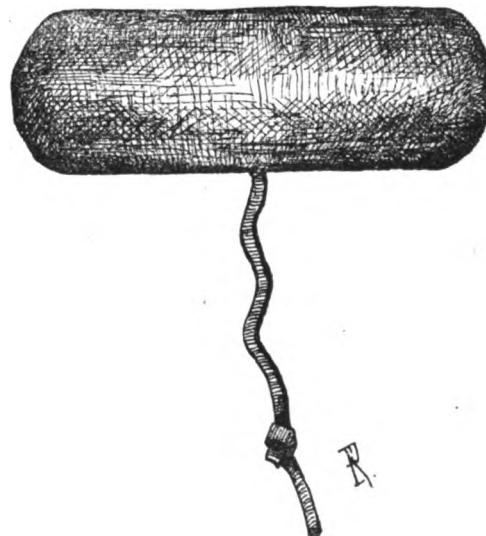


Fig. 2.—Size No. 1 Bulb inflated. One-half actual size.

The important part that this instrument plays in the operation of resection of a portion of intestine will now be considered. It will be necessary, in order to more fully comprehend the usage of this

instrument, to give the history of an operation of enterectomy.

The disease, which proved to be a scirrhus of the sigmoid flexure, was located about one inch below the junction of the descending colon with the sigmoid flexure, almost occluding that portion of the gut. The section necessitated the removal of about two inches of intestine. All the preliminaries of the operation having been arranged, insuring thorough antisepsis, an incision, about six inches long, was made about one and one-half inches to the left of the umbilicus, and the diseased portion of the gut exposed. Warm cloths and sponges were kept about and over the wound, and no part of the intestine was allowed to become unnecessarily exposed. Aseptic bands one-quarter inch in width were placed around the bowel, one about three inches above, and the other about three inches below the diseased portion, sufficiently constricting the bowel, so that nothing could pass beyond the bands into the field of operation, thus enabling the bowel operated upon to be kept in an aseptic state.

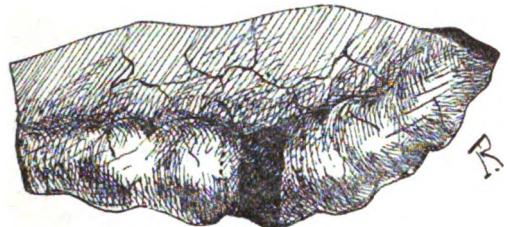


Fig. 3.—Diseased portion of gut; dotted lines showing the section.

The diseased gut was next excised. In doing this one sweep of the scissors was sufficient to cut through the full lumen of the gut on one side of the disease. A similar cut on the other side of the cancerous growth made the exsection complete, with the exception of the mesenteric attachment. To sever this, a triangular incision was made into the mesentery to permit a good approximation of its own margins and with those of the gut. After the removal of the carcinomatous tissue the field of operation presented two lumina of intestine, whose margins were, apparently, in a proper condition to be united. The interior of both ends of the bowel was next cleansed with sterilized water. The "inflated bulb" was now introduced—size No. 3 answering admirably for the caliber of this gut. The bulb, only partially inflated, was introduced with one end into the lower, the other end into the upper bowel. The lower bowel was gently grasped between thumb, index and middle fingers of one hand, the other hand likewise encircling the upper bowel. The ends of the intestine were slipped together over the bulb so that the margins of the wound came in contact. The proper

apposition being made in this way, the bulb was inflated to such an extent that the bowel tissue in immediate contact with the bulb was put upon a gentle stretch, and the end of the tube secured to prevent any escape of air.

It sometimes happens that the lumina differ in size. This is especially the case in operations upon the small intestine where there is no sacculated condition of the gut. In the large intestine it is to be expected, owing to the presence of the sacculations and constrictions. Such a difference in caliber where the gut is not normally sacculated, is caused by the contraction of the circular muscular fibres of the gut, the incision on the one side having passed through a portion of the bowel where the circular fibres were more numerous than in the portion through which the other incision was made.

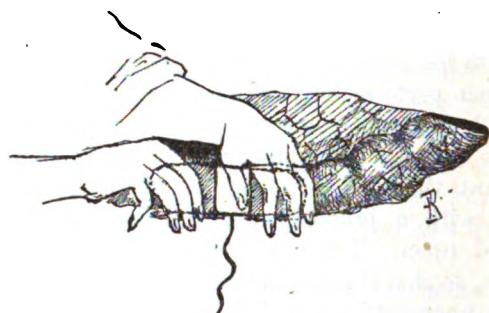


Fig. 4.—Slipping gut upon the partially inflated bulb.

With the full inflation of the bulb this difference of caliber is overcome, so that the operator will not experience this difficulty when placing the final sutures. The inflation will also tend to decrease to some extent the eversion of the mucous coat, which sometimes causes considerable annoyance during suturing, by protruding very markedly.

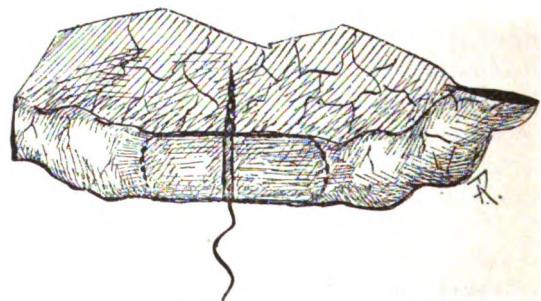


Fig. 5.—Showing inflated bulb in position.

In the case under discussion the stretching of the bowel tissue upon the bulb was sufficient to retain the gut in the proper position without any further assistance. There is a possibility, however, that the gut may have a tendency to slip off. Under such circumstances, a small instrument, called the "*serre-fin*," made of small spring wire is called into requisition.

It answers the purpose very well in holding the tissues in apposition till they are secured by sutures. Two *serres-fins* will invariably answer the purpose, one being placed about the mesenteric attachment,

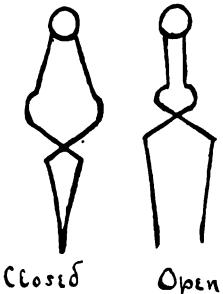


Fig. 6.

the other immediately opposite on the lower border of the bowel. These instruments will keep the margins of the wound in perfect apposition by gently compressing them. With a skillful assistant, however, it will not be necessary to resort to these instruments.

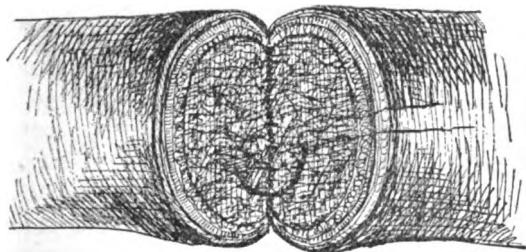


Fig. 7.—Showing introduction of a Czerny suture.

The portion of the bowel in immediate relation to the inflated bulb, resembled a well stuffed sausage, the wounded margins in good apposition, with the mucous coat slightly everted owing to the retraction of the longitudinal muscular layer. It was now comparatively easy to place the different sutures that require so much delicacy in their introduction. The suture recommended in intestinal surgery is the "interrupted suture." They are of three distinct kinds, and these three are generally all used during an enterectomy. The sutures are: the Czerny, a suture used only for uniting the mucous membrane.



Fig. 8.—Needle for mucous coat. Actual size.

It is introduced by passing from within the canal a thin and strongly curved needle threaded with some

Fig. 9.—Needle for serous coat. Actual size.

fine silk, through the mucous membrane, so that the knot can be made to appear in the canal of the

gut. Next is the Lembert suture, used in bringing together the serous membranes. This stitch is one of greatest importance. Piercing the membrane with a thin straight needle from one and one-half to one and three-quarters inches in length (a common cambric needle answers very well), about one-quarter of an inch from the margin of the wound, the serous and muscular coats are picked up. After traversing the muscular coat it is brought out about one-sixteenth of an inch from the edge, and carried across to the opposite side; then the needle again perforates the serous and muscular coats one-sixteenth of an inch from the margin of the wound, and traversing the muscular coat makes its exit about one-quarter of an inch from the margin. The silk is tied with a friction knot. This stitch causes the edges of the wound to roll in, thereby bringing together two peritoneal strips of one-eighth of an inch in width.

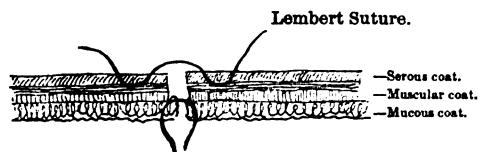


Fig. 10. Czerny Suture.

A third suture is the "intermediate." This stitch can only serve as a support to the Lembert suture when introduced. It, to some extent, lessens the tension, but does not possess any particular value. The needle used is identical with the one employed in placing the Lembert suture. Entering the serous coat about one-eighth of an inch from the margin of the wound, the needle is passed into and along in the muscular layer to the edge of the wound, whence it is withdrawn. Passing to the opposite side it re-enters the muscular coat, traversing the layer for about one-eighth of an inch, and is then brought out.

When the mucous membrane has been well brought together, and a good Lembert suture has been accurately placed, it would be of little importance to introduce the intermediate suture. It certainly could not be of any assistance in securing a more perfect closure of the bowel to prevent leakage.

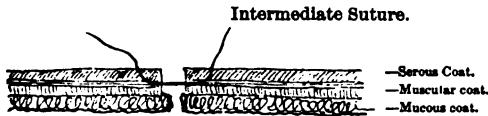


Fig. 11.

Alternating between the Lembert and intermediate sutures while stitching a gut is not to be recommended, since the intermediate suture, immediately following a Lembert, becomes a partial Lembert after the knot is tied, as the relative position of the tissues will show. In this respect it would, to some

extent, hinder the Lembert suture in fully accomplishing its duty of securing perfect closure of the gut. The circular suture of the intestine is best accomplished by using the Czerny and Lembert sutures only, allowing one Czerny to every three Lembert. It is the simplicity and solidity of the suture that is desired. The average number of sutures generally required in an enterectomy ranges from twenty to thirty. However, this entirely depends upon the size of the bowel operated upon. The closer the Lembert suture is placed, the greater are the chances for success, and the more marked is the skill on part of the surgeon. The object is to so close the canal that there will be no leakage, and that the peritoneal surfaces are sufficiently brought together, so that union may ensue. It is in this way only that union can be obtained quickly enough to prevent leakage, as has been shown by Lembert.

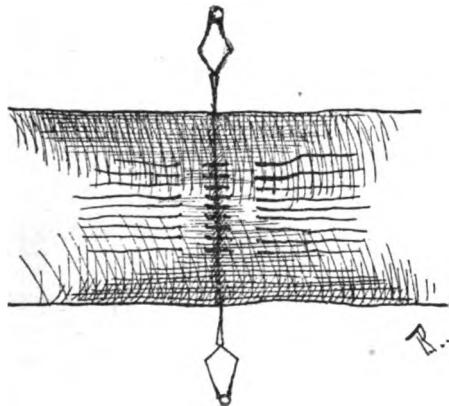


Fig. 12.—Sutures in position.

Returning to the case under consideration : the sutures were placed as best suited the convenience of the operator, the mesentery being united before the sutures were introduced into the gut. The mesenteric attachment is of great importance, as there is generally some little difficulty encountered in bringing about a perfect attachment with the wound of the intestine. With some care, however, this union can be satisfactorily effected, so that no communication is left between the interior of the bowel and the fatty cellular inter-space between the two layers of the mesentery. The mesentery having been properly sutured, the bowel was next attended to. Sutures were introduced along the whole of the circumference, except where the tube was attached to the bulb. Here an opening of one-half inch in length was left unstitched to allow the extraction of the bulb. This was done by releasing the tube and allowing the air to escape. Any residual air that remained in the bulb was forced out by suction, by taking the end of the tube between the lips and thus making suction with the mouth. It is very necessary that the bulb should

be thoroughly exhausted, so that the tension upon the immediate sutures during extracting may be reduced to a minimum. After extraction of the bulb the opening was closed with two Czerny and four Lembert sutures. In placing the final Czerny sutures, it was found impossible to so insert the stitch that the knot could be brought into the canal, it was, therefore, left imbedded in the submucous coat.



Fig. 13.—Folding of Bulb during extraction.

After removing the bands, the bowel was replaced, and the abdominal wound closed.

The time required for an intestinal resection with the aid of the inflated bulb and a skillful assistant, all preliminaries to the operation having been arranged, should occupy no less than fifteen nor more than thirty minutes.

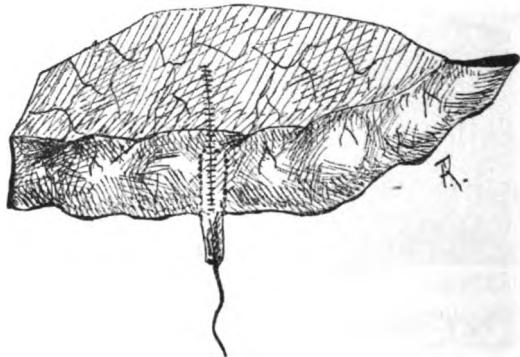


Fig. 14.—Partial extraction of Bulb.

In cases where the loss of heat from the intestine is very marked, the bulb may be filled with hot water instead of air. This will cause a heated surface to come in direct contact with a surface that is rapidly giving off heat. Excessive loss of heat will thereby be decreased, and the chances of a collapse lessened.

A PLEA FOR CLEANLINESS IN MINOR SURGERY.

BY CHAS. A. HOUGH, M.D., LEBANON, O.

Nothing original or novel is attempted in this essay. It is merely a plea to general practitioners for the use of well tried methods in minor surgical work.

The few illustrative cases appended are reported because they are common place and show what may be done with simple methods by a general practitioner, without special training, professional nurses, or an elaborate outfit.

Antisepsis is not generally observed in the surgery of general practice, done outside the immediate influence of schools and colleges. In few cases is this because of ignorance. Generally it is a negative result of *inertia*, or it is because of an idea that asepsis depends solely upon great technical skill of the operator, that antisepsis can be attained only by the use of expensive, elaborate and mysterious means, or that practically, it is not worth a busy man's while to attempt such method, because the old way is satisfactory to the public and yields sufficiently good results.

The latter will not long be so. Some day the surgery of "redness, swelling, pain and heat," and "laudable pus" and daily dressings will appear as defendant in court, the gospel of cleanliness will reach some hearts *via* the pocket, and fear of pecuniary loss will do what no amount of rational argument or clinical demonstration has yet accomplished.

Consider the ordinary "treatment" of a "felon." Did any class of charlatans habitually consume from one to three months in the mismanagement of an acute inflammation so small in area, easy of access and unmistakable in character and behaviour, entailing because of their non-interference, frightful suffering, weeks of enforced idleness and irremediable deformity of one of the most prominent, and indispensable members of the body, medical societies would resolve, medical editors would fulminate, and a general hue and cry would arise because of such incompetency. Almost every whitlow comes to the physician's attention early and again in its later stages, yet many a trivial inflammation becomes a periostitis, a consecutive thecitis carrying infection into the palm with all its calamitous results, because an enlightened profession persists in binding a dirty rag, filled with fermenting, decomposing poultice over a field of battle, where beneficent phagocytes are valiantly warring with the invader and praying for reinforcements. This pathology may not be demonstrated but the application is good.

To show that repair without suppuration does not depend upon special skill of the operator, that it may be obtained by the use of simple, convenient and inexpensive means, that the results so obtained are much more satisfactory than those following old methods, and that it is well worth a general practitioner's while to learn and practice some simple but effective antiseptic routine, is the purpose of this paper.

Although the first dressing be somewhat troublesome and tedious, the necessary after-dressings are usually so few that the antiseptic method is really time saving.

"Healing by first intention" is not a pathological

curiosity as we were once taught. It is evidence of good surgery. It is well proven that septicaemia and erysipelas come from wound infection and may usually be prevented by scrupulous cleanliness. Toy pistol tetanus comes from no inscrutable Providence. The small boy's dirty, fourth-of-July hand, "tied up in the blood," and sometimes cultivated by the "nearest physician," is an excellent culture ground for the bacillus tetani.

Because uncovered and more exposed to contamination than other parts of the body, the hands and face whereon is done most of minor surgery, should be dressed with extreme care. Large wounds measurably cleanse themselves by free bleeding and serous discharge. The blood itself is an excellent germicide. Danger of infection by pathogenic organisms may be said to be inversely proportioned to the size and supposed gravity of the injury. Bacteriology teaches that "minor surgery" should be as carefully done as are the more capital operations. The term itself is a misnomer. There should be no *minor* surgery.

No candid man will deny that absolute cleanliness is indispensable in capital operations. Every general practitioner, especially if he be remote from the cities, may at any moment encounter emergencies wherein he must attempt formidable operations or still further jeopardize his patient's chances by undue delay. Tampering with a strangulated hernia until each practitioner within a ten mile radius has successively been called and made taxis is not good surgery.

The same antisepsis and careful work which control a suppurative palmar thecitis, plus promptness, coolness and good judgment, will perform a herniotomy which will be more promising than hours of clumsy taxis.

Twenty-one years ago, when Vallandingham was dying from a gunshot wound of the abdomen, the late J. Marion Sims telegraphed from New York to my neighbor: "Open the abdomen and secure the bleeding vessels as I have seen done at Sedan." At that time, what surgeon would have acted upon such advice? To-day a physician cannot be regarded as truly competent, unless he be familiar, at least theoretically, with the successive steps in an aseptic abdominal section. The general practitioner should attempt laparotomy only under compulsion, but it is not asking too much that he know when it is demanded and be prepared to assist intelligently.

The experience and skill obtained by practicing the proper method in minor surgery, will do much toward qualifying us to do creditably, under compulsion, an occasional capital operation.

Being without skilled assistants, the rural practitioner should choose and thoroughly memorize a

scheme of procedure which he can promptly and conveniently carry out in person. Officious aid from bystanders with unclean hands; rags, towels, instruments, etc., sometimes defeats the surgeon's best efforts at antisepsis.

The dressing should be as simple as is compatible with efficiency. The danger of omitting some necessary though apparently trivial caution, is thus reduced to a minimum. It is an old truism that a chain is just as strong as its weakest link.

Some operators succeed with the use of only sterilized water, or even with "tap-water," but they employ an ideal technique which occasional operators should not attempt to emulate. It cannot be denied that if asepticism gives good results, the same, plus the use of a harmless germicide, especially if in the hands of a tyro, promises better.

A solution of bichloride of mercury is efficient, conveniently made from portable tablets, harmless, if properly used, and cheap. A few ounces of carbolic acid to be used one to twenty of water, for immersing and sterilizing instruments, and powders of boracic and salicylic acid for the extemporaneous preparation, with boiled water, of Thiersch's solution, complete the necessary germicides.

Assorted sterilized catgut and silk purchased from a reliable dealer, plenty of reliable borated cotton for dressings, and for use in place of sponges, and a supply of sublimated gauze are necessary and convenient accessories. The instruments used should be few, good, smooth, and of "aseptic" pattern.

There are many conveniences and refinements which may be added to the above list, but the occasional operator will do well to restrict himself to a few appliances whose uses and limitations he has thoroughly learned. Such an outfit carried in a convenient bag with the obstetrical instruments, I have found a great convenience.

Space does not permit a detailed description of the various procedures, or of the many materials which may be used for ligatures, sutures, etc. A good text book written within ten years, should be consulted. I merely wish to show that the multiplied refinements of material used by specialists are neither necessary nor advantageous in the general practitioner's hands.

ILLUSTRATIVE CASES.

CASE I.—H. W., aet., 16, buzzsaw wound; disarticulation at radio-carpal joint, all the tendons on back of wrist being lacerated and destroyed, and the bones of carpus torn out. Important soft parts on anterior of hand not seriously injured. Thumb gone; the first metacarpal bone being divided near proximal head. I removed head of first metacarpal bone

and small fragments of carpal bones, making practically an exsection of all parts between radio-carpal and carpo-metacarpal articulations. The parts were thoroughly irrigated with three per cent. solution of carbolic acid. The metacarpus was placed in position against articular surface of radius, the parts swathed in sublimated cotton, and the hand and arm immobilized on a splint. The wound over disarticulation of first metacarpal bone healed immediately. The ragged wound over back of hand and wrist healed by granulation. There was little inflammation, little discharge, and the last splint was discarded on 40th day. Healing was complete in 25 days. Considering extent of injury, it was a good result under Listerism.

CASE II.—Sub-fascial phlegmon of palm of four days' standing, following a blister which had broken and become infected. Hand and arm enormously swollen, fluctuation apparent in palm, and between third and fourth metacarpal bones on back of hand. Temperature under tongue, 103.5°. After making incision in palm and repeatedly washing out parts with hot solution of bichloride of mercury, 1-1000, aiming to reach every part of the pus cavity, I made a small counter opening on dorsum and irrigated with large quantities of the solution through the hand. Enveloped the hand in sublimate cotton and gauze. Next morning temperature normal; no pain and little soreness. Dressings not disturbed for forty-eight hours. Then the dressing was found slightly soiled. The small cavity remaining was again irrigated, same dressings as before applied and left four days. The dressings were dry and clean when removed and healing was complete. Having directed that fingers should be frequently moved after second dressing, there was no loss of function in hand.

CASE III.—Benign tumor in breast, ovoid, $2\frac{1}{2} \times 1\frac{1}{4}$ in., not involving mammary gland. Removed because corset caused irritation and soreness. Field of operation scrubbed with bichloride solution. Hands washed with same and alcohol. Instruments immersed one-half hour in five per cent. solution carbolic acid. Two strong sutures of sterilized catgut were passed through the skin at side of incision, carried beneath the bottom of cavity from which tumor had been removed and emerging at other side of wound. When firmly tied these sutures entirely obliterated the cavity. Wound in skin closed by ordinary sterilized catgut sutures. Dry boric acid was dusted over wound, dry borated cotton applied, and the parts kept at rest by a wide piece of adhesive plaster firmly applied, extending one-fourth around the body. On the 15th day the dressings were removed, the knots of the sutures, which were absorbed at surface of

skin, were rubbed off with the hand. Healing was complete. Cotton was not soiled nor adherent to skin.

CASE IV.—"Bone felon" on distal phalanx of thumb. Usual symptoms. "No sleep for four nights." The inevitable poultice was removed, anæsthetic given, the entire hand scrubbed with soap suds and the thumb bathed in bichloride solution. After a free incision, the seat of suppuration, including an area of denuded bone, was thoroughly scraped and the parts irrigated with bichloride solution. A dry dressing of sublimated cotton was applied. But one after-dressing necessary. Repair complete in six days from time of incision.

CASE V.—Lacerated wound of face dividing upper lip and orbicularis oris. The parts were thoroughly washed with bichloride solution, and the divided muscle was coapted by a deep suture of two strands of iron-dyed silk. The skin was sutured with fine silk. Sublimated cotton applied and secured by adhesive strip. There was no suppuration. Repair complete in eight days,

I have dressed incised, lacerated and contused wounds of face and extremities, removed tumors, done tenotomy, enucleated tubercular glands, removed carious bone, opened tendon sheaths for thecitis, done amputations, circumcisions, etc.; in short have done the usual minor surgery which comes to the general practitioner, and have learned to expect such results as mark the above cases.

Occasionally one will fail to completely sterilize a very dirty wound or one marked by extensive destruction and sloughing. In these cases repeated irrigations may be necessary.

If we but remove all organic foreign material from wounds and prevent its further entrance, Nature will usually repair promptly, with little redness, swelling, pain or heat, with no suppuration, and no necessity for frequent dressings.

A NEW TREATMENT FOR ACUTE GONORRHEA.

BY H. F. NORDEMAN, M. D.

Lecturer on Genito-Urinary Diseases at the New York Poly-clinic.

In many diseases which are characterized by an obscure etiology and pathology, the efforts of investigators to discover an abortive or radical cure are constantly placing in our hands a host of new remedies which, after a brief period of popularity, are cast into oblivion..

Perhaps no disease has more remedies, or rather so-called methods of treatment for a radical cure, than acute gonorrhœa.

If we only look back within the last decade, how many new "cures for clap" have been discovered. We all know and remember the great enthusiasm with which retrojection of the urethra was first practiced. How glowing and remarkable were the reported cures!

Next, as an improvement of the former method, irrigation of the anterior urethra with antiseptic or mildly astringent solutions was proclaimed the only safe and rational treatment. This latter method, although efficient, soon had its usefulness limited to a small proportion of cases only. How disappointed we all felt. This treatment appeared so rational. Thus it is with other methods, such as Ultzmann's brush treatment, abortive nitrate of silver injections, rest and ice-cold applications, etc.

To discover a cure for this scourge and bane of wedlock, to eradicate and drive away this penetrating coccus, to destroy it at an early stage of its development is a task--is an object in life well worthy of investigation and research. How can we destroy the gonococcus early enough? How can we prevent it from working its way into the deeper layers of the urethra, where it lurks like a hidden snake, upon slight provocation, awaking from its dormant state to re-assert its power by infecting the system of the innocent woman, married to a man who considers himself positively free from gonorrhœal taint.

Under existing circumstances, then, we ought to be pardoned for rejoicing at every step taken in the proper direction to accomplish a cure for acute gonorrhœa. But are we any nearer to the desired goal than we were ten years ago? Assuredly, no. There is absolutely nothing new under the sun. This can be applied to the so-called new treatment for acute gonorrhœa which Dr. C. E. Cotes describes in the *Lancet*, Febr. 27, 1892. Dr. Cotes claims to cure his cases, all things being equal, within the short period of twelve days. He brings forward, as evidence, forty-two patients who have been treated successfully by this method. When we read these truly brilliant results, we are led away with enthusiasm. We exclaim truly, wonderful! Will this method stand the test or will it be doomed as others that have gone before it? I feel assured that other observers, after a patient trial, will only ridicule and condemn this treatment.

As far back as 1889, in my class of genito-urinary diseases at the New York Polyclinic, a plan of treatment almost identical with that described by Dr. Cotes, was taught and experimented with by myself with the assistance of Dr. W. G. States. How different were the results obtained. How rarely could we record a cure.

We continued our experiments for about six months upon about thirty acute cases of gonorrhœa, but the results were decidedly *bad*—yes, so bad that the method was abandoned and placed in the same category as the other procedures which, for a brief period, have enjoyed the distinction of being the only sure and safe cures.

Every now and then, when I lecture on the treatment of acute gonorrhœa, I describe this method in detail, not because it is valuable in itself, but as a warning to others not to employ it.

The plan of treatment followed out by myself and Dr. States was as follows:

Every case of urethritis in which the gonococcus was found, was placed on the examining table, and after urinating, so as to cleanse the anterior urethra thoroughly, irrigated with hot water.

As the urethra, in the acute stage of gonorrhœa, is very sensitive, an eight per cent. solution of cocaine was first injected. This injection did not allay the pain or irritation in every case.

The Klotz endoscope was introduced, the urethra carefully dried with a cotton swab, and an application of a two per cent. nitrate of silver solution was made, one about four inches, and a second about one and one-half inches from the meatus. The tampon was removed, in each case, by dragging it along with the endoscope so as to touch the entire urethra. The patient was then directed to go to bed, and put on a milk diet. For the strangury, which always followed the application, he was given an injection of aqueous extract of opium, and was told to urinate in hot water and, if possible, to take a hot sitz bath.

This treatment differed from the so-called new treatment of Dr. Cotes, in that the balsam copaiba was not employed, but, as a substitute, powdered cubeb and bicarbonate of soda (one to three) was ordered.

The real great difference is found when comparing the results obtained. As mentioned before, my patients were not cured or benefited, but, on the contrary, were made worse, or refused to submit to the treatment. Some developed complications, such as phymosis, cystitis, prostatitis, and others epididymitis, etc.

The endoscope, in my hands, for the treatment of acute gonorrhœa has proven a decided failure. It is, certainly, one of the most valuable instruments in the armamentarium of the genito-urinary surgeon; it certainly has its place, but, like many others, it finds its usefulness limited to a distinct number of cases only.

What an important part the endoscope plays in the treatment of subacute and chronic urethritis. Here we are enabled, by its aid, to obtain a view of a cir-

cumscribed pathological condition, and thus apply treatment to the diseased part only.

Not so in acute gonorrhœa. As an instrument for the purpose of inspection the endoscope is a failure. No distinct picture can be obtained. The first four inches of the urethra are in the stage of active and increasing inflammation, and little or no pathological change has occurred. Next, the application of cocaine, which is required before introduction of the endoscope in the acute stage, would materially change the color of the inflamed mucous membrane, and we are not able to distinguish healthy from diseased portions of the urethra. This so-called new treatment possesses other objectionable features, among which are the following:

1. It can be applied to a limited number of cases only. The meatus, in a real virulent gonorrhœa, is contracted, everted and swollen to such an extent that the introduction of an endoscope is a physical impossibility.

2. A still greater objection is the well known fact that a large number of cases of acute gonorrhœa do not extend further back than two inches from the meatus, tending to become lodged in the lacunæ of the duct of the large gland in the fossa navicularis. How then would this treatment benefit these cases?

3. The insertion of an endoscope deeper than three to four inches will have a tendency of provoking a posterior urethritis and other complications.

4. The greater objection is the fact that a very few patients are able to follow out the plan of treatment, and thus, in private practice, it could not be recommended.

In order to convince myself once more that the treatment recommended by Dr. Cotes was not feasible, within the last few months I have experimented with it, and have reached the conclusion that only in his hands can such brilliant results be obtained.

The following cases have been treated by me assisted by Drs. Ennis and Trumbull:

J. S., aged twenty-five years, seen March 9th, 1892; first attack of gonorrhœa two years ago, cured by bichloride irrigation within two weeks. At present has acute gonorrhœa of thirty-six hours' duration. Meatus favorable for use of endoscope. Discharge fairly abundant, contains gonococci. The urethra, after the patient had urinated, was irrigated with hot water and injected with an eight per cent. solution of cocaine. Sensibility of urethra dulled. Endoscope introduced four inches without pain or irritation. Urethra dried and one application of a two per cent. nitrate of silver solution made four inches from the meatus, the tampon drawn along, and a second application made two inches from the meatus, the applicator being dragged out at the end

of the endoscope. The patient was sent home and directed to go to bed. Copaiba, in the form of the Lafayette mixture, and a weak injection of the aqueous extract of opium were prescribed. One-half hour after the patient had left the clinic, he rushed back in great alarm and stated that on attempting to urinate, he succeeded in pressing out only a few drops of blood and that he was suffering agonizing pain. The penis looked red and swollen and felt hot to the touch. The patient was in agony and had a constant desire to urinate. After bathing his penis in hot water followed by hot water injection and then cocaine, the irritability of the urethra was somewhat allayed and the patient returned home.

March 10. Patient reports that he had passed a sleepless night, had constant painful dribbling and bloody discharge. The foreskin is hot and oedematous and the urethra feels sore.

March 12. Since the day before the left epididymis has become inflamed, the discharge is not copious and does not contain gonococci. Patient was sent home and given directions for the treatment of his epididymitis.

March 13. Saw the patient at his home and found no change in his general condition, epididymitis very severe.

March 16. Epididymitis subacute, discharge very copious and urination very painful.

March 23. Same condition as above with slight improvement, excepting the condition of the epididymitis.

This patient was faithful in his attendance at the clinic, but up to April 10th, one month from the beginning of treatment, was in as bad a condition as when he first presented himself.

Case II.—J. S., aged twenty-four years, a strong, robust man, came to the clinic March 12th. First urethritis one year ago, following coitus with mistress during menstrual period. This attack lasted two weeks and was cured by the injection of permanganate of potash, gr. i. to $\frac{1}{2}$ vi. of water. His present attack dates back twenty-four hours, being due to a similar cause as last time. No gonococci found (this is indeed unusual in the examination of the discharge of a urethritis). The discharge is quite thick and muco-purulent, very slight pain on micturition. Same endoscopic treatment applied as in last case, following each and every detail as advised by Dr. Cotes.

March 13. Patient reports restless night; painful, bloody, frequent urination and copious discharge.

March 14. Same condition as above, also very painful erections. Again no gonococci found.

March 16. Although patient follows out directions, no improvement.

March 30. Discharge still quite copious and purulent, the urethra sensitive.

April 2. Very slight change or improvement.

This patient did not return for further treatment. A truly wonderful result if we stop to consider that the case was a non-specific one.

Case III.—Young lad, seventeen years old. First attack of urethritis, twelve hours' duration. The treatment applied, but patient never again put in an appearance.

This failure on my part to obtain satisfactory results will not deter me from giving it another trial. Perhaps other observers will obtain the glorious results claimed by Dr. Cotes.

During the next few months we will continue to experiment, and can only express the hope that we can join Dr. Cotes in sounding the praises of his so-called *new* treatment of acute gonorrhœa.

Since writing the above I have treated six more cases by this method and have utterly failed to obtain favorable results.

1309 Madison Ave.

TREATMENT OF GUN-SHOT WOUND IN THE RIGHT GLUTEAL REGION PENETRATING THE RECTUM.

By E. B. GOELET, M. D., Saluda, N. C.
Member of the North Carolina Medical Association.

On Nov. 4th, 1891, I was called to see John P., a youth of fifteen years, who, while carrying a shot-gun, loaded with squirrel-shot, fell, the breech of the gun slipping backwards, and the weapon being discharged, with the muzzle in contact with his body at a point opposite the right sacro-iliac synchondrosis. The whole load of shot entered the gluteus muscle, carrying with it the paper wadding and scorched pieces of his clothing. Upon examination under an anaesthetic, I found some of the shot just beneath the skin about one inch posterior to the anus and one-half inch to the right of the coccyx.

I made an incision there and extracted the shot, then passed a probe through from the point of entrance and brought it out at the lower wound, a distance of about five inches, and followed it with a rubber drainage tube the size of a No. 20 catheter (American scale). After cleansing the wound thoroughly with a 1 to 2000 bichloride solution, I dressed it with antiseptic cotton, applied a T bandage and gave him an hypodermatic injection of $\frac{1}{4}$ gr. morphia and $\frac{1}{10}$ gr. atropia.

At that time there was no evidence of any communication with the rectum. The next day the feces passed naturally and continued to do so until the 9th, five days after the injury, when I was hastily summoned, the messenger stating that the wound at both ends was discharging feces in abundance. I took with me a neighboring physician who

administered chloroform. I then dilated the sphincter ani to almost complete paralysis, and upon examination found the rectum penetrated opposite the lesser sacro-sciatic notch. I then introduced into the rectum a rubber tube, one-half inch in diameter, for about four inches, so that its upper extremity should be above the point of communication between the wound and bowel, thoroughly cleansed the wound of all fecal matter, gave a saline cathartic, and ordered the patient to be fed only on animal soups and extract of beef. On the next day, at my visit, I found the rubber tube in the rectum too small, so I had made a tube of hard fine grain wood three-quarters of an inch in diameter, with a hole in it over one-half of an inch wide, to carry off the feces, which I kept in a fluid state with solution of sulphate of magnesia, until the bowels were thoroughly emptied.

Under the administration of the animal fluid diet, the kidneys acted freely, and there was little or no residue collected for several days. At my visit each day thereafter I removed the rectal tube as well as the tube from the wound, and thoroughly irrigated both wound and bowel. For two weeks after the date of the injury I continued to remove debris of clothing and gun-wadding from the wound. I maintained the patency of the bowel with the wooden tube for twenty-six days, when it gave the patient so much distress, I was obliged to abandon it. Upon the first introduction of the wooden rectal tube I closed the wound of entrance by pressure, and thereafter introduced the drainage tube through the lower wound. The upper wound, after some days, began to granulate and heal kindly; the lower wound to diminish in depth and calibre until Dec. 12th, a period of thirty-eight days, when I discharged the patient. The lower wound at that time presented a mere opening only one-eighth of an inch in depth, and there being no apparent or discernible communication whatever with the bowel, the feces passing naturally.

March 30, 1892. Within the past few days I have seen the patient about his usual avocations, and he says he is entirely well.

Dr. Joseph L. Hancock, in the *Practitioner*, describes a simple device for holding soft drainage tubes in place. It is a pin, constructed of one piece of nickel-plated steel wire, turned into a circular form once and a half around. A sudden bend is made and the end carried straight across the middle to opposite side where the point rests upon the wire. The other end of the curved wire is turned into a small hook to receive the point, for holding and giving firmness to the springing frame, which is so made as to facilitate the catching and unlocking of the pin. *Medical Age.*

Clinical Department.

HEMATOMA OF THE NOSE—EPITHELIOMA OF THE LIP—NAEVUS—INGUINAL HERNIA.

BY CHARLES MCBURNEY, M.D.

Professor of Surgery at the College of Physicians and Surgeons, New York; Visiting Surgeon to Roosevelt Hospital, etc.

I bring before you this patient as an illustration of a point that might occasionally come up in practice, and give rise to considerable doubt in your mind as to the exact nature of the difficulty.

As you look into the nose of this boy you can notice considerable occlusion of both nostrils. Sarcoma develops in the nasal passages in a manner not unlike this, and yet from the history of the case you can ordinarily eliminate malignant disease and very readily arrive at a diagnosis of the condition.

Two weeks ago, while playing baseball, this boy received an injury from a bat striking him on the nose. The straightness of the nose would indicate that there was no fracture of the nasal bones themselves, and when you come to feel them you will find that they are of normal shape. The trouble seems to be here due to a crushing directly backwards of the cartilaginous portion of the septum, and at some point in that cartilaginous portion there was a rupture of the bloodvessels. As a result of this fracture an extravasation of blood took place beneath the mucous membrane, and you have the formation of a hæmatoma. The tumor gives rise to considerable discomfort, and the development of a hæmatoma is a matter of considerable importance. The prognosis is in general good. I have seen a case of hæmatoma like this that lasted a good many weeks, and was finally sent to a surgeon for operation for malignant disease.

We have in the case of the next patient a very typical example of a form of disease you are all more or less familiar with, and yet you observe a difference between this one and the many others you have seen. The difference consists in the absence of an ulcerative condition.

The nature of this case is readily made out by noting what this tissue is made up of. In this case you see the disease is confined to the superficial layers of the skin of the upper lip and is evidently a hypertrophy of these tissues. The history of this case may throw some light on the diagnosis:

We have here a woman of about forty years old, who some ten years ago noticed a small area of infiltrated tissue resembling a warty excrescence on the upper lip which continued to steadily increase. It

has scabbed a little and the scab has come away, but the continuous growth, the thickness of the edge, and the hard feeling is characteristic, even without ulceration of true epithelioma. In investigating these cases we should be very careful in informing ourselves as to the necessity for treatment, the method of treatment and the possibility of involvement of the neighboring parts, such as the lymphatic glands; as the existence of the disease in certain parts may render negative the results of operation by a rapid recurrence of the trouble. In every one of these cases we ought to look for lymphatic enlargement in adjacent parts. In this case I do not find any, so I should regard the prognosis, as far as a recurrence is concerned, as favorable.

In removing a disease of this character, we generally go at least an eighth of an inch from its periphery, for otherwise the operation will be imperfectly done, and in this case a little of the ala of the nose will have to be removed.

Now as to the method of operation. There are two methods that suggest themselves at once to our mind, and one of them is excision—a complete excision through the whole lip, making it very wide and depending upon approximation of the edges to cover up the defect. You can at once see that means a considerable dragging forward of the tissues of the cheek in every direction, resulting in a certain amount of deformity of both cheeks and nose by reason of the great tension on the septum.

The other method of treatment consists in the use of the cautery. This disease can undoubtedly be eradicated by the cautery, or caustic applications of one kind or another, but the objection to the use of these agents is that you are apt to leave a portion of the disease behind, even if employed in a conscientious and thorough manner and by skillful hands.

The next patient has a large hypertrophied mass of vascular tissue situated on the upper lip. The interesting feature of this case is the rapid growth; and the mistake has been made here—as you will find in most of these cases—in allowing these little vascular growths which appear in children at a very early period of life, to remain untreated until they reach a considerable size. When these appear on the lip they are extremely liable to become hypertrophied by the constant use of the lip and the constant forcing of blood into the tissues. Every time the child nurses blood is forced into the tissues, until by mechanical pressure the bloodvessels are more or less dilated.

The mother states that she did not notice this growth at the birth of the child, who is now two years of age, and she is probably correct in her statement. I have seen a good many such cases behave in that way, developing very rapidly from a very small

patch at first and growing to a very considerable size. If removed at an early period it might have required an incision no larger than a split pea, but permitted to remain it greatly disfigures the child's face. It is therefore necessary to perform some sort of an operation for the relief of this trouble.

Now as to the method of operation. How are we to treat this trouble? There are a good many ways by which it can be treated—by injections of iron and the various forms of astringents that have been in use for years and years. I advise you against the use of either of these measures, as they are unscientific and dangerous to the patient. When you throw a foreign substance into the tissues, it may be carried through the veins into the body, and may result in very serious trouble. There are only two methods that I would recommend to you, one of which is the cautery, which can be used with but a fair result, and the other is excision. The best thing to do in this case is to make a clean cut excision, which can be done without any danger whatever. Most of these nævi are pretty well encapsulated, confined to a very limited area, with a very well marked wall, the vascular supply proceeding from a very narrow pedicle. By making a V-shaped incision around the growth, the entire mass can be very readily removed, and if this is done only a slight scar will be produced and the result will be perfect. This operation ought to be performed as soon as possible.

The next patient is a young child three years of age, who has an indirect inguinal hernia. The question of the contents of this hernia is a matter of no little importance in the mode of treatment. On percussion it seems to be perfectly flat and gives no tympanitic sound whatever. The presence of perfect flatness in any of these tumors is no positive evidence of the absence of intestines. You may have an intestine containing fluid or solid faeces, or again the intestine may be behind a mass of solid omentum which would give you flatness on percussion. Whether this is partly omentum and partly intestine I do not know, but it probably consists of both.

Now, with reference to the treatment of this case. Of course, there will be differences of opinion in this respect. There are those who believe in the value of a truss, one thinking one particular truss will cure any form of hernia, while another thinks another will. My own experience is that the use of trusses in inguinal hernia in young children has proved very unsatisfactory. On the other hand, operative interference has proved extremely serviceable in these cases, the tendency to cure being much greater than in adults. I have operated upon a good many of these cases, and have not seen one die as a result of operation, while the procedure has practically brought about a cure.

CYSTIC DEGENERATION OF THE OVARIES—UNDEVELOPED UTERUS.

BY H. MARION SIMS, M.D.

Professor of Gynecology at the New York Polyclinic; Visiting Gynecologist to St. Elizabeth's Hospital, etc.

The first patient I show you is a woman on whom I operated in January, 1891, and she comes here now so that we may see how she is getting on. When she first came to this clinic she was a great sufferer from most exquisitely painful menstruation, the pain commencing fully two weeks before the appearance of the menstrual flow, and persisting up to the last day of the period. She had constant backache and headache, and was feeling extremely miserable in every way. It was not difficult to make a diagnosis in her case, for she had cystic degeneration of both ovaries which were also prolapsed, the uterus being retroverted and lying on top of the cystic ovaries.

The only thing to do was to subject her to an operation and to this she readily consented. She came into the hospital of the Polyclinic and I operated upon her before the class. The operation was not attended with particular difficulties, except the breaking up of the adhesions which were found to be present, as they generally are in all of these cases. She made a good recovery and was discharged four weeks later cured.

The result in this case has been a most happy one in every way. She complains of no more pain, and the uterus is perfectly normal in every way except that it is still retroverted. The interest in this case attaches itself to the result of the operation after a period of eighteen months. In this case the uterus was completely retroverted and bound down by adhesions. I had not examined her since the operation and did not know whether the adhesions had formed again or not. On examination now I find that she has no adhesions and I can restore the uterus to its normal position with perfect ease. The only trouble she has now is the regular reappearance of menstruation, every four or five months, since the removal of the tubes and ovaries. This is a curious phenomenon and one which I am unable to explain.

I have now a private patient about twenty-eight years old, upon whom I operated nine years ago, removing two enormously distended tubes from pyosalpinx. I removed in that case both tubes and ovaries, doing as radical an operation as I could with safety. She had severe dysmenorrhœa before the operation, but since then she menstruates with

regularity and has no pain whatever. I have never seen any satisfactory explanation given of this phenomenon.

In very many of these cases of removal of both tubes and ovaries, the patient will have hemorrhages. When we come to make an examination of the uterus in cases of metorrhagia following total ablation of the appendages, we very frequently find a distinct enlargement of the uterus itself, and when we examine the uterus we find the patient has all the symptoms of endometritis with degeneration of the glands. So this profuse hemorrhage will go on from day to day and from week to week. The only way to remove this condition is to treat the uterus in the same way as when you have enlargement of the utricular glands from other causes. The curette will then be the only remedy.

The next patient I present is a typical example of a condition we see very often and which is known as amenorrhœa, due to a non-development of the uterus.

This woman is twenty-three years of age, and has been menstruating ever since her fifteen year, but never with any degree of regularity. On examining the uterus I find a pin-hole os, the neck and the whole uterus measuring but one and a-half inches in depth.

As to the treatment of a case of this kind, there is one form I have found better than all others and that is dilatation of the canal and stimulation of the uterus, letting the patient wear a self-retaining stem for a considerable length of time. In this way the uterus gradually grows larger and larger, and menstruation reappears with more or less regularity until the courses are thoroughly established.

I have now in my private practice a young girl who has reached her twenty-fifth year and has a condition precisely similar to this. I inserted one of my small self-retaining stem pessaries in the uterus, and the result is that in four months the uterus has gradually grown, until from one and a-half inches it has reached a depth of two and a quarter inches, while menstruation has been regularly established.

What I propose doing in the case before us is not what I would recommend you to attempt, and that is to dilate the cervix and introduce the stem pessary without having put the patient to bed. The first thing I will do here is to apply to the uterine canal, a little pure carbolic acid, after thoroughly washing out the vagina. Carbolic acid acts not only as a disinfectant to the uterus, but being an anæsthetic, renders the operation less painful than without its use.

CONICAL STUMP; AMPUTATION.

BY ANDREW McCOSH, M.D.,

Attending Surgeon to the Presbyterian Hospital, New York.

This patient is a young man, aged seventeen years. Seven years ago, or when he was ten years of age, his leg was amputated a short distance below the knee joint. Since then he has been wearing an artificial leg. This was worn with comfort until two or three years ago when it first began to give him inconvenience, and discomfort has gradually increased until now, and indeed for the past year, he is compelled to almost entirely discard its use. The young man is and always has been in perfect health. As you will see in a moment he has a typical conical stump, and it is because of this that he is unable to wear his artificial limb.

In this connection let me say a word on this subject, which is an important one both as regards prognosis, treatment and its medico legal relations. Conical stumps result most frequently in the arm and in the leg; they are rare in other situations. The reason for this choice is that it is from the upper epiphysis of the humerus and from the same epiphysis of both tibia and fibula that the main growth of bone springs. The important origin for bone growth is, therefore, left, while in other amputations the main epiphysis is removed. The nearer that the amputation is to the joint the more probable is the future conicity of the stump in children. Indeed, in amputations in children under fourteen, done just below the shoulder or knee-joints, a future conical stump may be said to be the rule rather than the exception. This may result at the end of one or two years, or may be more slow in its development. The bone grows proportionately with the amount of growth from the same epiphysis in the opposite limb; perhaps there is more extensive growth because of the irritating and stimulating effect of the operation on the bone and subsequent inflammatory (healthy) action in the end of the bone. The soft parts grow but slightly, and consequently the bones keep on growing till they project far beyond the muscles and may even perforate the skin. In consequence pressure of the artificial limb cannot be borne.

The patient is now etherized and you look upon a good example of conical stump in the leg resulting from an amputation which, from the cicatrix, I should judge had been performed by the circular method and just below the knee joint. You see how the stump tapers down to a blunt point, that is the tibia, and to a sharp still farther projecting point, the fibula. The skin is adherent tightly over both bones, and is projected over the sharp end of the fibula and

is tightly plastered over the projecting end of this bone for an inch or so. Reamputation is absolutely necessary, and I commence by cutting transversely across the lower end of the bones in the line of the old cicatrix. I expose their ends and find for an inch and a-half on dissecting back of the flaps no sign of muscles, but only skin and fascia firmly adherent to the bone by cicatricial tissue. I dissect still farther back and come upon muscle. I would like to dissect still farther up, but fear to do so as I would invade the knee joint. I now divide the bones at a point two inches above their ends, the line on the tibia being immediately below the tuberosity. You see that two inches of the tibia has been sawed off and two and one-half inches of the fibula. The wound is now sutured by silkworm gut sutures and closely united without drainage, the parts covered by rubber tissue and sterilized gauze.

This boy is now seventeen; had he been younger I should have feared that my flaps were too short, but his bone will not grow much longer and the flaps will probably suffice. In all such amputations in children it is of the utmost importance that the flaps should be extremely long to allow for some growth, at least, of the bone. I remember a child of two years, whose arm I amputated just below the shoulder joint, two and one-half years ago, and where the flaps were ridiculously long as this sequel was anticipated. Primary union resulted with baggy flaps. The child has now a conical stump of marked degree and is ready for reamputation. You see how important it is to have this fact in mind when you make your prognosis. There are a few surgeons who still doubt that the conicity is due to growth of bone. Dr. C. A. Powers has recently written an excellent article on this subject, and a year or so ago, in one of our courts, such a patient was argued over for days by distinguished expert medical witnesses, who did not all agree as to the cause, but the judge, if I remember rightly, took the side of those who attributed the conical stump to growth of bone and not to faulty amputation. [Nine days later the above case was again shown, the sutures removed; primary union throughout had resulted.]

Dr. Jonathan Hutchinson in the Archives of Surgery offers the following memoranda for the avoidance of error in the recognition of abdominal retention-tumors:

(1) The distension, although enormous, is usually quite painless.

(2) The retention is never absolute, but only residual. There is always overflow.

(3) The patients never assists the surgeon, but rather mislead him, insisting that there is free relief of bowels and bladder.

Abstracts and Selections.

THE CONSERVATIVE TREATMENT OF SALPINGITIS.

BY PAUL F. MUNDE, M.D.,

Professor of Gynecology at the New York Polyclinic and at Dartmouth College; Gynecologist to Mt. Sinai Hospital, and Consulting Gynecologist to St. Elizabeth and the Italian Hospitals.

I am convinced that in the past many uterine appendages have been removed which, with a little patience and perseverance on the part of the physician and patient, could have been saved. This remark applies chiefly to those cases of catarrhal salpingitis in which the patient complained of pain in one or both ovarian regions, which did not yield at once to local applications of iodine, etc., and in which the appearance, perhaps, at irregular intervals of a muco-purulent discharge from the vagina denoted the possible presence of a pyo-salpinx. My experience has shown me that in a large majority of these cases local treatment, if sufficiently persevered in, will relieve the symptoms more or less, if not entirely, and that many of these patients will eventually recover, even though one of their desires—that of conception—is not gratified. I see every year several hundred cases at least of this disease, and if I look back during the last fifteen years I may well say that I have seen at least from two to three thousand women suffering from acute, sub-acute and chronic inflammation of the uterine appendages. It would not have strained my conscience very much if I had operated on, we will say, one-half of these cases, because in many of them the appendages were undoubtedly inflamed, adherent, and more or less enlarged; but I can say, and I believe with all due modesty, that I am proud of having operated only on sixty-three such patients, two of whom died, the rest making a comparatively uneventful recovery. I wish I could say as much of the ultimate results of the operation, for, unfortunately, by no means all of these sixty-one patients were completely restored to health by the operation. In eight menstruation persisted with more or less regularity, even with increased intensity, for from two to three years after the operation, and in rather a larger number of cases the pains for which the operation was performed, continued with almost no improvement. These unpleasant results cannot be laid to any fault of the operator or to the operation itself, but are merely facts which must be borne in mind when the indications for the operation are formulated and the prognosis as to complete recovery is made. Other operators have similar unfavorable

results to complain of. We must not, therefore, always look upon the recovery from a laparotomy for diseased ovaries and tubes as synonymous with a complete restoration to health; and it is obviously rash to promise such a result when we never know whether our promise will be fulfilled.

Before proceeding to speak of those cases in which the conservative treatment of the inflamed tubes is applicable, I think it well to make a few remarks as to the diagnosis of the diseased conditions of the appendages.

All of us who see many of these cases know how very uncertain a positive and absolute diagnosis is. We have certain subjective symptoms extending over a greater or less period, sometimes even a number of years, consisting mainly of more or less constant pain in the ovarian region, perhaps a succession of attacks of pain and increase of temperature which confine the patient to bed for several days or longer, and a deterioration of the general health. A physical examination reveals the uterus more or less immovable, chiefly from side to side, the vaginal vault somewhat rigid, tense, and bimanually the appendages are felt to be somewhat swollen, often very tender, and attached to the bottom of Douglas' pouch. Very frequently, in cases where the most pain is complained of, no distinct disease of the appendages can be detected by the finger. At times one feels an oblong immovable swelling, of the size of the little or index finger, through the vaginal vault or behind the cervix; and again an enlargement of the size of a breakfast sausage may be detected in the same location, which presents undoubted signs of fluctuation. Sometimes the swelling, instead of being oblong, is spherical, but in the large majority of cases the outlines of the swelling are indistinct and irregular, and there is no definite distinction to be made between the ovary and the tube. An oblong, fluctuating tumor in this location usually means a tube containing fluid, either pus, serum, or blood. If spherical, it is usually the ovary, either cystic or containing pus. If of irregular outline, on abdominal section the tube will generally be found to be thickened by inflammatory action, its calibre even lessened or divided into a series of ampullæ, and curled around and adherent to the ovary, both organs being attached by inflammatory adhesions to the adjacent peritoneum. The fimbriated extremity of the tube is closed, and often that portion of the tube dilated by a serous or purulent accumulation. It is evidently impossible for the examining finger to detect all these pathological conditions; hence, if we operate on a case presenting the peculiarities above referred to, we are more or less in the dark until our fingers, exploring through the abdominal wound, have revealed to us the exact state of affairs.

Now, what I wish to emphasize, is the fact that a mere slight more or less acute or sub-acute inflammatory enlargement of the Fallopian tube, even though it be entirely detectable by the finger per vaginam, does not warrant the removal of the diseased organ until all palliative means at our disposal have been tried and tried again without avail. The mere presence of catarrhal salpingitis, with or without adhesion, with or without agglutination of the tube, with or without closure of its fimbriated extremity; the mere presence of a certain amount of pain in these regions, does not by itself warrant us in removing the diseased organs.

In order to avoid unnecessary and uncalled-for criticism, I will say that the presence of pus in the Fallopian tube—that is, a true pyo-salpinx—*always* calls for the evacuation of the pus, if not for the complete removal of the diseased tube. If the pus is contained only in one tube, that tube is adherent—that is not freely movable in the pelvic cavity—and the appendages of the other side are normal, it would be justifiable, in my opinion, to aspirate that tube per vaginam, and, finding pus, to enlarge the incision, wash out the tube, and insert a drainage tube, and in this way endeavor to produce obliteration of the calibre of the Fallopian tube without subjecting the patient to the danger of a laparotomy. I have had a number of these cases, and by persistence and perseverance have succeeded in curing them, although the drainage tube had to be worn for a number of months. When the tube is movable or when both appendages are diseased, it is not worth while or safe to attempt to cure the case by vaginal aspiration and drainage, and the removal of the diseased organs by laparotomy is undoubtedly the only correct treatment.

The conservative treatment of inflammation of the Fallopian tubes may be divided into two chief sections :

1. The palliative, including the forms of treatment by which it is intended to cure the inflammation or empty the distended tube without any dangerous operative procedure—that is, without opening the abdominal cavity.

2. Those methods which necessitate abdominal section and the attempt to restore the normal calibre and normal relations of the tubes.

Palliative Non-operative Treatment.—Inflammation of the Fallopian tubes (and I am obliged to include in this category more or less inflammation of the ovary, since probably the inflammatory process usually extends through the tube to the ovary, and seldom one is inflamed without the other) is either acute, sub-acute, or chronic.

Acute inflammations of the tube are treated on the same principles as acute peritonitis: rest in bed, hot

vaginal douches, hot poultices, opium to allay pain, antipyretics to control fever. No sane man would think of removing an acutely inflamed tube by abdominal section, unless the symptoms and explorative aspiration per vaginam showed it to be a case of acute pyo-salpinx. The mere inflammatory swelling of the tube, such as I have frequently seen, probably containing serum, usually subsides, under the above palliative measures, in the course of several weeks, if not sooner. As the case becomes sub-acute the temperature subsides. Then very mild applications of tincture of iodine and glycerine, equal parts, may be made to the vaginal vault, accompanied by glycerine tampons. The patients may be given daily warm sitz baths at about 105° F. for half an hour. Besides this, in the acute and sub-acute stages, blisters may be placed over the abdominal skin on the affected side. It has been my experience that the majority of these cases of acute and sub-acute salpingitis have terminated in complete recovery within from three to six weeks if treated in this manner. It is not necessary that the patient should be confined to her bed after the acute symptoms have subsided, and I have treated a number of such cases in my office with complete success, although I admit that the treatment in these cases often extended over a period of months. But I have seen a tube on several occasions, which was the size of a small banana, gradually diminish, shrivel and entirely disappear, so far as its detection by my finger was concerned, after several months of iodine and glycerine applications, hot douches, and warm sitz baths. My partner, Dr. Wells, can substantiate my statement in this respect in regard to a lady whom he treated for me during my absence in Europe two years ago, and who after about six months of this treatment, entirely recovered. Occasionally the tube obstinately refuses to diminish in size, fluctuation persists in it, and we are forced to believe that it contains fluid of some kind. This may be pus, and in that case, aspiration per vaginam will reveal the true nature of the case, and it should be treated according to the rules laid down above. If the fluid turns out to be serum, its complete removal by aspiration in my experience usually results in a shrinking of the hydro-salpinx and a complete obliteration of the tube, with restoration to health, even though the tube may remain attached to Douglas' pouch.

The chronic stage is the one in which the case usually comes into the hands of the specialist. The treatment above outlined has either failed in the hands of the general practitioner, or else the true nature of the case has not been recognized, or the patient herself has neglected to seek advice until the acute and sub-acute stages had passed; or, indeed, there never was any acute or sub-acute stage, but

gradual recurrences of so-called "pelvic congestion," evidenced by more or less severe pain, often following a chronic endometritis, have gradually resulted in an inflammatory hyperplasia of the tubal walls and agglutination of the fimbriated extremity, and an adhesion of ovary and tube to the neighboring peritoneum.

Now, I can fairly say that of the many hundred cases of this affection which I have seen in the chronic stage, but a very small proportion, as I have already stated, has seemed to me to warrant the removal of the diseased appendages. On the other hand, in looking over my records at the Mount Sinai Hospital for the last eighteen months, I find forty-seven cases of chronic salpingo-oöphoritis recorded, all of which were treated by the iodine and glycerine, hot douche, and warm sitz-bath methods, and of whom thirty-eight were discharged improved, four cured, and five unimproved; the average duration of the treatment being three weeks. Of the unimproved I should say one remained in the hospital only two days, another three days, a third six days, a fourth seven days, and a fifth fourteen days—evidently too short a time in any case to expect any benefit from treatment. I have in my mind ten cases occurring in my private practice during the last seven or eight years, in whom the removal of the enormously swollen tubes would certainly have been justified, if I had not felt that it was my duty to endeavor to do all I could to obviate the necessity for the operation. One, a lady from Buffalo, consulted me eight years ago for as violent a salpingitis of both sides as I ever saw. She had an acute endometritis, her ovaries and tubes were bound down, her uterus absolutely immovable, the right appendages enlarged to the size of an orange, and I felt obliged to tell her that it would be impossible for me to cure her except by removing the appendages. She refused the operation, but insisted upon being treated, no matter how severe the treatment was, so long as it benefited her and enabled her to live without being operated upon, in comparative comfort. Her menstrual periods were profuse, the pain at times so severe as to require morphine, and had been so for years. I never knew a woman more persistent in her endeavors to regain health without the aid of the knife. Blisters, iodine, glycerine, hot sitz baths, hot douches, persistent local use of galvanism for months, finally succeeded in improving this case so materially that now the lady has been in very fair health for at least five years and has seldom been compelled to consult me or any other physician for her pelvic organs.

Six of the cases were seen by me during the last two years. I saw the patients in the sub-acute stage

at first, in consultation, later they came to my office: the tube was still as large as when I had seen the patients in bed; it was apparently immovable, was painful, but there was no more febrile reaction. In from three to six months I had succeeded, by means of the palliative treatment just mentioned, in reducing the tube so that it was practically no longer detectable per vaginam, and, so far as any symptoms were concerned, the patients were entirely well. The cases in which I have succeeded in benefiting patients with adherent, more or less enlarged appendages by this treatment are so numerous that, while I do not pretend to have absolutely cured any of them, I certainly have felt that they have escaped in my hands, the necessity for, and the dangers of a laparotomy. They may not have conceived, they may never conceive; but certainly, if I had removed their appendages, the possibility of conception would have been out of the question.

Much has been written and said about the use of massage to procure the detachment of the adherent appendages. I confess that I doubt very strongly whether any treatment of this kind will avail. From my experience with the liberation of adherent appendages through an abdominal incision, I do not see how anything short of the finger introduced in that manner can succeed in peeling loose the adherent organs. Local galvanism undoubtedly exerts an exceedingly beneficial influence, if persisted in and not used strong enough to give pain, in relieving local pain, which is one of the constant symptoms of inflamed and adherent ovaries and tubes. Quite recently active dilatation of the uterus, the use of the curette, and drainage of the uterine cavity, with the avowed intention of also draining the canal of the tube, has been recommended by Polk, Strong, of Boston, Pryor, Krug, and others. While I can readily understand the utility of dilating a uterus which contains septic material from which a direct infection has spread to the canal of the tube, I really cannot see what good it is going to do to subject the patient to the risks necessarily following such dilatation and curetting, when she has nothing but a chronic endometritis, and when the accumulation of pus in the tube is either entirely sealed off from the uterine cavity, or when there is really no distinct purulent accumulation in the tube. That a connection between the uterine cavity and the Fallopian tube may be secured, on rare occasions, by means of dilatation of the uterine canal and a fortunate patulous condition of the uterine opening of the tube, cannot be denied. The late Dr. H. Lenox Hodge, of Philadelphia, demonstrated many years ago the possibility of the fetus in a tubal pregnancy being

forced into and escaping through the uterine canal. Dr. Emmet corroborates this experience, and I myself have seen a similar case. We frequently hear of cases where periodical discharges of so-called purulent material take place from the uterus, being preceded by pain in the ovarian regions. The assumption has been made with fair justification, that these purulent accumulations came from a pyo-salpinx which filled and discharged and refilled and discharged again, but I am not at all sure that Bland Sutton is not correct when he says, in his recent work on the "Surgical Diseases of the Tubes and Ovaries," that there is no trustworthy evidence that a pyo-salpinx or a hydro-salpinx discharges into the uterus. I, for my part, have never seen a case where an accompanying endometritis would not sufficiently explain the occurrence of the discharge. When I recall the numerous cases of salpingitis upon which I have operated, in which the walls of the tube were enormously hypertrophied and the tube divided into separate sacs, each containing a small quantity of muco-pus, with, perhaps, a little true pus in the ampulla at the infundibulum, I can readily understand how utterly futile would be the attempt to produce a drainage of such a tube through the uterine canal, no matter how widely dilated or how patulous the uterine orifice of the tube. I confess, therefore, that I am not as yet a convert to this treatment of salpingitis, although I am willing to admit that it is in the highest degree plausible and may be the one method of the future by which we can reach and treat by local applications these obstinate conditions of the Fallopian tube.

I am sorry to say that so far as actual cure is concerned, the palliative treatment referred to in the above lines, is by no means as satisfactory as I could wish it to be, but I still feel that if by these remarks I can induce those of my colleagues, particularly the younger generation, who have not yet grown to believe that they know everything and that they are infallible, to be more conservative with the knife and to try to preserve to a woman her distinctive organs as long as possible, I shall feel amply repaid and able to endure with equanimity the criticism which undoubtedly I shall receive from some of the gentlemen referred to, with whom I do not agree.

Operative Conservative Methods of Treatment.—It might be as well to call these methods *preservative* instead of *conservative*, because they are intended, while surgical, still to preserve or restore the integrity of the diseased tube. All these methods imply the performance of an abdominal section. Hadra, formerly of Austin, now of Galveston, Texas, seems to have been among the first to recommend the

detachment with the fingers of the adherent tubes, which, if found healthy, he left otherwise intact (1885). Polk (1887) went even further than this, for after detaching the adherent tube he expressed the mucus from it so as to restore its calibre, and attached the uterus to the anterior abdominal wall in order to prevent the re-adhesion of the tube. Martin (1888) removed the fimbriated extremity of the tube and restored its lumen. Howitz, Championnire, Terrillon, practiced a similar method with excellent results. In a paper written by me on "A Year's Work in Laparotomy," published in January, 1888, I theoretically made the suggestion to liberate the tubes, express their contents into the uterine cavity, and insert a syringe into the fimbriated extremity and inject a 1-5,000 bichloride solution through the tube into the uterine cavity. I confess that I have never practiced this method, because I have really never since then operated on a case where the tubes were not so much diseased that it seemed useless to try to preserve them. Skutch and Martin, both in 1889, have reported cases in which, instead of extirpating the tube in hydro-salpinx, they have resected a portion of the sac and sutured the internal to the external wall in such a way as to restore the calibre of the tube. Unless the ovary is healthy and the normal calibre of the tube can be so restored that both the uterine and abdominal openings are likely to remain patulous, these methods are, of course, of little avail. Still, having arrived at a point where the removal of the diseased organs has reached its climax and where little remains to be said on this part of the subject, the object of future operators must be to endeavor to preserve instead of destroy, and to attempt by frequent efforts to restore the appendages to their normal condition and relations. A very laudable step in this direction has been made as regards the ovaries, for as long as fifteen years ago, Pippingskold, of Christiania, recommended and practiced the obliteration of small cystic Graafian follicles by means of the Paquin cauterity, instead of removing the ovary as was formerly done; and the late Prof. Schroder did even better, because his method was surgically more correct, by excising the small cysts and uniting their walls with catgut sutures. I have adopted this plan myself on several occasions. That such an ovary is still capable of maturing and furnishing healthy ova is beyond question. If we can only succeed in restoring tubes diseased by catarrhal inflammation to their healthy patulous condition, we will have achieved a triumph superior even to the marvelous results which have been attained by the labors of Lawson Tait and his followers.—*American Journ. of Obstetrics*, July, 1892.

THE TREATMENT OF SYPHILITIC STRICTURES OF THE RECTUM.

BY DR. E. HERCZEL, Budapest.

The author calls attention to the difficulties encountered by the surgeon in the treatment of strictures of the rectum of syphilitic origin. This is due to the fact that owing to the considerable loss of tissue produced by specific ulcers, the lumen of the gut is greatly encroached upon by the resulting cicatricial masses, and that the entire peri-rectal cellular tissue is involved to such an extent in inflammatory proliferation that a dense infiltration of the rectal walls and surrounding structures takes place. In consequence of this dense infiltration, the entire anal portion of the rectum is converted into a stiff, unyielding tube. The treatment by bougies ordinarily employed is useless in many cases, both on account of the contraction going on in the peri-rectal and rectal cicatricial tissues, and because it occasions much pain and cannot be continued for a sufficient length of time.

In cases where the stricture is not extensive, nor situated high up in the rectum, and where the surroundings are not much involved (fortunately most strictures are situated only a few centimetres above the anal opening) it is frequently possible to produce a cure by cutting through them with the galvano-cautery or Paquelin, by knicking them at several places with the knife, or in severe cases by spinchterotomy or even rectotomy. Dilation by bougies must then be kept up to prevent recontraction. A complete cure by this method of treatment is, however, seldom possible, and as a rule a permanent improvement of the patient's condition is the most that can be hoped for.

In cases of circular, markedly indurated strictures the above mentioned procedures will not suffice. Excellent results can sometimes be obtained by excising the cicatricial ring according to the method of Dieffenbach and then suturing the margins of the incised mucous membrane.

The worst cases are those where the callous stricture is long and narrow and extends far upward. In these cases fistulous passages exist reaching far above the upper limit of the stricture and undermining the rectal walls. The rectum resembles a thin cord embedded in resisting, indurated, cicatricial tissue. Complete fecal obstruction frequently occurs, digestion is impaired, suppuration may take place around the rectum, or pelvic peritonitis may develop; the patients emaciate greatly and assume a cachectic

appearance. In these cases repeated incisions of the posterior rectal wall and raphe perinei only give temporary results, and after a time the stenosis recurs, the more rapidly the higher the stricture is situated. Under these circumstances it becomes necessary to rapidly dilate the stricture; as such procedures have to be frequently repeated in severe cases, it is not surprising that the English surgeons, especially, have recommended formation of an artificial anus in the region of the sigmoid flexure for securing a permanent outlet for feces.

An artificial anus has many disadvantages and is only a palliative measure. In place of it the author recommends Kraske's method of sacral extirpation of the rectum, by which even high seated strictures can be radically resected and cured.

Only two cases operated upon by this method are to be found in the literature, reported by Richelot and Ferrier. The author has recently operated upon a third case, the history of which is as follows:

The patient was a married woman, aged 31, who shortly after marriage contracted syphilis in the rectum from unnatural practices on the part of the husband. She underwent a course of inunction treatment for five years without much success; the syphilitic ulcers healing for a time and then again suppurating. Numerous fistulous passages formed around the anus which discharged large quantities of pus, and had frequently been laid open and curetted. Two and a half years ago patient suffered for three months from endometritis and localized pelvic peritonitis. Since commencement of disease constipation and severe pains during defecation had been present. A rectal stricture had existed for four years, and for two years defecation had been attended with great difficulties. In May, 1890, she consulted Prof. Billroth, who incised the fistulae and performed a linear rectotomy, followed by dilation with elastic bougies. The constriction gradually returned, the feces were passed with great difficulty and with violent colicky pains in the abdomen. Urination became painful and frequent; the urine contained a large quantity of pus.

When admitted to the hospital, March 17, 1892, the patient was greatly emaciated. On examination with the index finger, a circular mass of cicatricial tissue was found four and one-half centimetres above the anal opening, which contracted the lumen of the rectum to the size of a crow-quill. A number of radiating scars were present around the anus. Three centimetres to the right of the anal margin was found a grooved cicatrix, five centimetres long, in the middle of which were the openings of two fistulous tracks extending respectively for a distance of four and one-

half and seven centimetres, but not communicating above with the rectum.

March 21, 1892, operation under combined chloroform and ether narcosis. An incision fourteen centimetres in length was made in the raphe, curving outward from the right margin of the sacrum and penetrating to the rectum. The coccyx was then resected and the sacrum above the fourth sacral vertebra divided transversely with the chisel. The peri-rectal tissue was indurated and the thinned rectal tube was embedded in a firm, bacon-like mass, in which any differentiation was impossible. To avoid injury of the rectum and neighboring parts the dissection was carried out slowly under guidance of a uterine sound passed through the stricture. The parenchymatous hemorrhage from the cicatricial tissue was marked, but was arrested by transfusion of the vessels and compression with iodoform gauze and sponges.

After two hours of laborious work the rectum was dissected out for a length of about fourteen centimetres. During this procedure it was perforated at a small place about twelve centimetres above the anal opening. It was then laid open by a longitudinal incision, the upper end of the wound being situated about two centimetres above the stricture in healthy mucous membrane; the stricture was about seven and one-half centimetres long. The patient now became collapsed and it was found impossible to finish the operation in a typical manner, because in consequence of cicatricial fixation the central portion of the rectum could not be drawn out through the sacral wound. The distal half of the rectal stump was, therefore, hastily amputated and the free margin of the central movable stump (the posterior portion of which had been opened) fixed to the sacral integument with four sutures. Six other silk worm gut sutures were used to unite the raphe and former anal opening.

The subsequent course of the case was satisfactory. Up to the fifth day only the outer layers of the dressing were changed. March 26, after a large dose of castor oil, the patient passed enormous masses of feces without the least pain. The free end of the rectal tube which had been stitched to the skin sloughed off gradually, while the deeper lying stump was drawn up by the granulations, so that three weeks after operation it extended almost as far as the funnel-shaped cutaneous opening. May 9th, two old, perirectal fistulous passages, situated at the right gluteal margin, which suppurred markedly were thoroughly scraped out and resected.

The patient now passes her feces through the sacral opening without pain, and is rapidly recovering her health.—*Wiener Medizinische Wochenschrift*, No. 27, 1892.

THE TREATMENT OF LEG ULCERS.

BY THOMAS S. K. MORTON, M.D.,

Professor of Surgery in the Philadelphia Polyclinic.

The Dressing.—The method is as follows: The surroundings of the ulcer or ulcers are thoroughly cleansed with soap, brush and water, and, if necessary, shaved. The soapsuds are then washed away with simple water, and the parts doused with 1-1,000 sublimate solution if the ulcer is foul, inflamed or otherwise manifestly septic. If these conditions are absent, the bichloride may be omitted. Next, the ulcerated surfaces are subjected to the powerful but harmless antiseptic action of a spray of full strength (15 volume) peroxide of hydrogen solution. Pouring on of the agent is almost as efficient, but very wasteful. If the spray is employed, however, it is essential to use an atomizer of which every part is made of hard rubber, as the powerful oxidizing qualities of the solution will almost immediately destroy any metallic parts with which it may come in contact. The ulcer having been thus sprayed until active effervescence ceases is then gently washed off by a stream of simple water, or by a pledget or mop of absorbent cotton saturated with the same. This carries away all detritus loosened up by the action of the peroxide. Next, the ulcerated area and one inch of the unaffected surrounding skin are covered in with strips of "Lister protective," one-half inch broad, overlapping each other about an eighth of an inch. Our object in using the protective is to keep the ulcer moist, to prevent friction and irritation at all times and the tearing away of reparative material at dressings, as well as to furnish a guide to the epithelial cells in their excursion across the granulations. It also acts as a capillary drain, carrying the secretions, drop by drop, to the edge of the strips where a suitable dressing absorbs and sterilizes them. The strips of protective should first be soaked in strong (1-1,000) bichloride solution, and then washed in simple or cold boiled water before being applied to the wound. This precaution is necessary, as the strong antiseptic probably kills or inhibits the growth of new-forming granulation and epithelial cells, and thus retards healing. Protective quickly spoils in solution, so that it must be sterilized immediately before using.

A dressing of gauze or butter-cloth, which has been wrung out of 1-1,000 sublimate solution, and folded in six or eight layers large enough to overlap the protective strips several inches in all directions, is then neatly put on without creases or other irregularities. This serves to absorb and disinfect the

discharges that may be transmitted into it from beneath the protective. Experience in each individual case will determine about how many thicknesses of gauze will be required for this purpose; but the less used, consistent with attaining the object desired, the better.

Finally comes the bandage. This is to keep the dressing in place, give the vessels support, and to prevent or relieve oedema. A bandage that I have been using for the past five years will not only remain just as applied for days or even weeks and be absolutely comfortable to the wearer, but also permits the employment of the fixed antiseptic dressing for leg ulcers while the patients pursue their usual occupation—no matter how arduous—almost unconscious that their formerly disabling disease is still present.

This bandage is applied to the foot and ankle in the usual manner until that point immediately beneath the calf is reached, where reverses would usually be begun. Here, however, the difference becomes apparent; no reverses are made, but the two edges of the bandage are kept equally tight, and it is thus wrapped around the limb, practically allowing it to guide itself, the surgeon only being careful to keep the edges of the roller equally tense as it unwinds. Thus it will be found that the bandage will mount upward around the calf in a spiral manner, take a circular turn around the leg, just below the knee, then descend again by a downward spiral around the calf, again mount upward as before upon the opposite side, slightly overlapping the previous turn, and so on until finally the leg will become enveloped in a bandage that might be called a figure of eight of the calf. It should be put on as tightly as the patient can comfortably bear, smoothly, and care should be taken that no points are left without being supported by at least one of the turns. A muslin roller, six yards long and three inches wide, will be found about the proper dimensions for this bandage. This method of giving support to the circulation of a leg is equally applicable even after the ulcer has been cured, or where swelling or varicosity exists independently of ulceration.

Redressing.—Until the parts have been rendered odorless, free of all irritation, and aseptic, it is advisable to redress the leg in the same manner every day, or at furthest, every other day; also, until these conditions have been secured, to use the bichloride of mercury solution as a douche. When, however, asepsis has been attained, strong antiseptics should be discarded in redressing, as they retard healing; simple water is then to be used instead. Subsequently the dressing should be renewed every second day if the person is using the extremity; but, if he is in

bed, dressings need not be renewed so frequently after the discharges have become scanty.

In this, as in every other method of treating leg ulcers, if the patient will consent to remain in bed or reclining, healing takes place very much more rapidly, but under the present system the number of instances where confinement is *essential* for healing is exceedingly small.—*Times and Register*, June 25, 1892.

RADICAL CURE OF SPINA BIFIDA.

BY DR. PAUL BERGER.

At the meeting of the Paris Academy of Medicine, January 12, 1892, Berger exhibited a case of spina bifida in a female infant, aged seven weeks, where he had grafted a plate of bone removed from a young rabbit, to take the place of the missing vertebral laminae. The tumor at the time of operation was of the size of a nut and communicated freely with the spinal canal. Attempts at reduction caused, in a short time, phenomena of spinal compression. There was complete paralysis of the muscles of the lower limbs with the presence of varus equinus, and paralysis of the sphincter ani. The outside of the tumor resembled cicatricial tissue, the centre was granular and suppurating. Rupture being imminent, surgical intervention was demanded. After rigorous antisepsis and chloroform anaesthesia, the tumor was circumscribed by two transverse incisions united at their extremities. After careful dissection, the serous sac, constituting the spina bifida, was detached from the surrounding tissues up to its point of insertion around the spinal opening. During this procedure the sac was ruptured, and an assistant had to apply his finger to prevent the loss of cephalo-rachidian fluid. The outer layers of the mass contained no nerve elements. A cylindrical cord of a few millimetres thickness projected from the opening. It was easily detached and returned into the spinal canal. The opening was 3 cm. in length and 2 cm. in width, and it was necessary to obliterate it. M. Berger struck upon the happy idea of using a bone graft. For that purpose a young rabbit was killed, and a bony lamella of one of the shoulder blades was cut the proper size and inserted into the spinal opening, after which it was covered by the membranous wall of the spina bifida, which was coapted by catgut sutures. On the eighth day the sutures were removed, and in the fifth week there was only a small transverse elevation without pulsation.

The operation had been followed by a slight increase of paraplegia, but this improved gradually.—*Bulletin de l'Académie de Médecine*.

THE TREATMENT OF FLOATING KIDNEY.

By PROF. RIEDEL.

The majority of operative procedures for the purpose of fixing floating kidneys to the lumbar region, have been unsuccessful, because soon after operation, the organ changes its position, its lower portion turning forward and lying upon the inner surface of the posterior upper margin of the pelvis, where it can be felt through the anterior abdominal wall. When in this position the constriction by the patient's clothing occasions much discomfort. This can be avoided if the kidney is also attached to the diaphragm, so that it will be enabled to follow the movements of the latter, as under normal physiological conditions. The author attempted to accomplish this in three cases, by suturing the lower portion of the kidney to the periosteum of the last rib. The attempt, however, was unsuccessful, because the upper portion of the organ was displaced forward, and the cicatrix soon became painful. He now makes use of the following procedure:

After exposing the lateral margin of the quadratus lumborum muscle, he cuts down and strips off the fatty and fibrous capsule over the entire posterior surface of the kidney. He then pushes the organ behind the diaphragm so far upward that only its lower half is exposed to view. The median portion of the fibrous capsule is then fixed to the anterior surface of the quadratus lumborum muscle by deep cat-gut sutures perforating the muscle. At the sides the movable soft parts (peritoneum and subserous fat) are invaginated as deeply as possible and sutured to the fibrous capsule. In this way the lower segment of the kidney is fixed, while the upper portion is still detached and lies upon the diaphragm. To produce a certain amount of stimulation, a mixture of bismuth in sublimate solution, is poured into the wound, and then a freshly boiled, broad strip of iodoform gauze is thrust between kidney and diaphragm in such manner that the entire posterior of the organ lying behind the diaphragm is covered with the gauze. This can be easily done by the use of two dressing forceps, which keep the gauze well stretched. The lower end of this gauze strip projects from the twelfth rib. A second gauze tampon is introduced into the place formerly occupied by the dislocated kidney, while a third is placed upon the lower portion of the organ lying for the most part upon the anterior surface of the quadratus lumborum muscle. To the end of each tampon is attached a silk thread which projects externally. The sacro-lumbalis and abdominal muscles

are sutured over the tampons over nearly the entire extent of the wound, openings being left for the extraction of the tampons. The cutaneous wound is then tamponed and a dressing applied. The first dressing is allowed to remain for fully four weeks, although at times it may be necessary to remove it earlier if it becomes saturated with bloody serum; in that case only the superficial layers are removed. After four weeks the muscles, which have become adherent are separated with a blunt instrument and the deeply placed tampons are withdrawn, which must sometimes be done under anesthesia. The silk thread will inform us as to the position of the tampons, of which the middle one is first removed, then the lower, and finally the upper. The removal of the latter usually presents the greatest difficulties because it is impacted behind the last rib. A deep cavity lined with granulations results; below the last rib a broad canal leads upward in which a drainage tube is inserted. The latter can soon be shortened to, and can be entirely removed in a few weeks. The separated muscles soon rapidly unite, so that danger of a hernia is almost entirely obviated. The patients remain in bed for a period of ten to twelve weeks, and are then provided with an elastic corset, to positively avoid the formation of a hernia. The cutaneous wound has usually closed by this time. Excision of the scar may be necessary if it is very broad.

The author has employed this procedure in five cases; in one case on both sides. The results of the operation have been very successful, and have persisted after a period of observation varying from one to one and one-half years. One of the patients suffered also from ophoritis, and another from gall stones and ulcer of the stomach, so that a part of their trouble was probably attributable to these affections. It is difficult in this class of cases to judge objectively the results of the operation, as we are compelled to rely upon the statements of the patient, which are frequently misleading. The actual results can best be determined in the case of intelligent patients who are free from complicating troubles.

Riedel has recently operated by a similar method, upon a case of prolapse of the rectum, which had recurred twice after other plastic procedures. He resected the sacrum, dissected out the rectum subperitoneally, and pushed it upward. The cavity on both sides of the bowel, between rectum and sacrum tightly tamponed with strips of iodoform gauze. The result was excellent, although localized gangrene occurred from the pressure of the tampon, with formation of a rectal fistula. After operation the patient regained complete continence of feces.—*Berlin Klin. Wochenschrift*, No. 28, 1892.

SURGICAL TREATMENT OF GENERAL PARALYSIS OF THE INSANE.

In the *British Medical Journal*, July 23d, Drs. McPherson and Wallace, of Scotland, report five such cases in which an opening was made through the skull over the oro-lingual centre, and the fluid collected under the membranes was let out. The results are given as follows:

Surgically, all the cases have progressed uninterruptedly to recovery. At the end of eight days the wounds were in every case firmly united, and in none was there a drop of pus. None of the patients seemed to suffer in the least degree from the operation. Undoubtedly, much of the surgical success was due to the able assistance which we, from the outset, received from Dr. Skeen, assistant physician at the asylum. We are deeply indebted to him for the assiduity with which he carried out all of our directions, the assistance he gave at the operations, and the untiring interest he takes in the after-progress of the cases.

Medically. In all the cases, with one exception, there was a marked improvement in the mental symptoms, lasting from one to three weeks. This may be fairly accounted for as the result of the operative procedure. We consider that the relief of pressure by the removal of fluid, the greater freedom allowed by the removal of bone for cerebral expansion and pulsation, and, perhaps, the relief of the inflammatory condition by the local depletion of the vessels of the scalp, diploe, and brain membranes, necessitated during the operation, may all have combined to produce the change we noted.

It is significant that concomitant with the cicatrization and increasing density of the scalp and fibrous membranes over the openings there took place a gradual deterioration in the patient's mental and motor symptoms. In Case 5, where an attempt was made to drain the pia-arachnoid sac by means of horsehair, the difficulty of preventing rapid healing of the wounds over the horsehair was found to be insuperable, and made its function of draining nugatory. Therefore, we are unable to state from our experience, whether such a mode of drainage would be beneficial.

We are inclined to regard the removal of subdural fluid a means towards the alleviation of the inflammatory condition of the pial vessels involved, and not the primary object of the operation. In connection with this we have noted that immediately after the operation, and in the after-history of the cases up to the present date, there has been no bulging of the scalp over the openings, which one would naturally have expected from the overpressure of fluid; but, on the contrary, that the scalp has been sucked in, so to

speak, and formed a cup-shaped depression. Again, as the membranes have hardened over the openings, the pulsation of the brain has become less and less apparent on palpation. The absence of bulging and pulsation might be accounted for by shrinkage of the brain tissue proper, were it not that the depression occurred from the first in cases in which there was no apparent atrophy of the convolutions.

That this cup-shaped depression is not due to adhesion of the scalp to the underlying membranes of the brain we are justified in stating, from the result of the post mortem examination of Case 1, who died three months after the operation, and in whom no such adhesion was found. The absence of adhesion is, of course, fatal to Mr. Harrison Cripps' theory that a lymphatic communication might be established between the membranes of the brain and the scalp tissues.

We regret to record, as the result of our experience, that no permanent or marked benefit was conferred upon our patients by the methods of surgical treatment we were led to adopt in the manner described. In Case 3, we believe that the motor symptoms of the disease were, and continue up to this date, relieved by the operation, but the delusional state is as bad as ever. We do not wish to discourage others from further attempts in the same direction. In our hands the operation proved, from a surgical point of view, eminently successful, and no bad results of any kind were suffered by our patients.

We would remark, finally, that it seems as if the operation, to be of material benefit, should be performed at an earlier stage of the disease than in our cases. In all the cases we trephined, the pathological appearances were such as to lead us to infer that the disease was fully established. We believe that the present state of our knowledge of general paralysis, and our power to diagnose the disease at a sufficiently early stage, is so imperfect, that as yet surgical treatment—at all events, by the method adopted by us—can be of no material benefit whatever.—*Maryland Medical Journal*.

TOTAL ABLATION OF THE UTERUS IN CASES OF LARGE FIBROUS AND FIBRO-CYSTIC TUMORS.

BY PROF. PEAN.

Pediculated tumors, sub-mucous, of the cervix and body of the uterus can be extirpated without much danger by our new methods. The removal of interstitial and sub-peritoneal fibromas of the body of the womb can be accomplished almost as simply.

Tumors which do not exceed the size of a nine months' old foetus can be extracted through the vagina,

the uterus being extirpated or left according to indications.

When, however, the volume of the morbid mass is larger, the surgeon has recourse to abdominal section; the tumor being exposed, drawn outside and tied as low down as possible, after which it is extirpated above the ligature. When the tumor is sub-peritoneal and pediculated, the operation is not more dangerous than in case of a cyst of the ovary or broad ligament. If the tumor is interstitial, the body of the uterus and its adnexes should be ligated and removed. In such a case, the cervix and the small portion left of the body form a mass which can be fixed to the inferior angle of the abdominal wound (extra-peritoneal method), or reduced, after being covered or not with the neighboring peritoneum (intra-peritoneal method). The first method presents great advantages—it can be quickly carried out and permits the surgeon to control the hemorrhage.

In 1868, M. Péan performed, for the first time, total ablation of the uterus for a large fibro-cystic tumor. The method he used has since been modified and simplified by him as follows:

The abdomen being opened, the tumor is drawn outside the abdominal wound and tied as near the cervix as possible with a rubber ligature. If the growth is made up of several lobes, each one is tied in the same way, and then the mass is divided. If necessary, the bladder and rectum are dissected out, and any small bleeding vessels twisted or tied. When this has been done, a metallic ligature is twisted just above or under the rubber one, and the mass is cut away as near it as possible, taking care to avoid the slipping of the ligature. The stump is then returned and the abdominal incision closed. Finally, the cervix, the stump, and the metallic ligature are removed through the vagina.

The results of this operation lead M. Péan to formulate the following conclusions:

1. Whenever a large tumor of the uterus exists, fibrous, fibro-cystic, or interstitial, the preceding procedure of total ablation of the uterus is indicated by the combined abdominal and vaginal methods.

2. This procedure is more rapid than the intra- and extra-peritoneal methods.

3. It enables us to obtain a larger number of cures.—*Bulletin de l'Académie de Médecine.*

On the ground of his experiments Maurel concludes that the danger of hypodermic injections of cocaine hydrochlorate lies from the start in the concentration of the solution employed and not in the quantity of the drug administered; and afterwards, in the accidental penetration of the toxic solutions into the blood-vessels.—*Therap. Gazette.*

Surgical Memoranda.

The Treatment of Suspected Gangrenous Hernia.—Dr. Rousing advises in place of immediate reduction, resection, or formation of an artificial anus, that the suspected coil of intestine be drawn out after the incarceration has been released, and be fixed in position by a few serous sutures, the surgeon waiting to see whether the intestine becomes gangrenous or not. If gangrene does not occur the intestine is returned and the hernial aperture closed; if it does the gut is resected or an artificial anus established.—*Centralbl. f. Chirurg.*, No. 28, 1892.

The Surgical Treatment of Perityphlitis.—Dr. Schede, of Hamburg, regards perityphlitis as an intra-peritoneal inflammation, a local peritonitis or one local at its commencement. He distinguishes several groups of the disease:

1st Group. The wall of the appendix is not materially affected, and the condition is one of temporary obstruction. If frequent recurrences take place resection of the appendix is indicated; its point of attachment to the cæcum is two inches above a line drawn from the anterior superior iliac spine to the navel.

2d Group. The walls of the appendix are involved. There is intra peritoneal suppuration usually with perforation of the wall; fecal concretions frequently present in appendix. These cases may recover without surgical interference. An operation is indicated if there is fever, and the abscess is enlarging and approaching the abdominal wall, because it is probable that adhesions separating the pus from the peritoneal cavity have formed. The author rejects Sonnenburg's operation in two sittings. It is not always necessary to excise the appendix, but the numerous purulent foci, frequently found between the coils of intestine, should be removed. They should be curetted, dusted with iodoform, and the abscess cavity tamponed with iodoform gauze.

3d Group. This consists in an acute inflammation of the appendix with perforation, but without previous adhesion of the intestines. In this case the surgeon is usually called in too late, and laparotomy hastens the fatal termination.

4th Group. Complicated cases, such as intestinal obstruction from adhesions of the coils of intestine. Carcinomata may give the signs of an exudate, or vice versa. Laparotomy clears up the diagnosis in many of these cases. In one of the author's cases a carcinoma had perforated the intestine and given rise to perityphlitis.—*Munchener Medic. Wochenschr.*, No. 17, 1892.

A Needle in the Pericardium.—Dr. Dziembowski observed the following case: A needle which, by accident, had entered the chest in a slanting direction, was broken off in the endeavor to extract it. The characteristic symptoms were: lessening of the pulse to 40, afterward a very distinct noise, showing that the heart was chafing against the broken piece of needle that remained in the chest. These symptoms were observed while the patient was in a sitting position; when lying down they appeared in a considerably less degree. Operation showed that the needle had pierced the cartilage of the fourth rib and here stuck out. It was successfully withdrawn without excision of the rib. Improvement followed without any complication.—*Nowiny Lekarskie*, February, 1892. *Satellite.*

Ivory Pegs for the Direct Union of Fractured Bones.—Dr. J. Gaudard has made some experiments which demonstrate that pegs of ivory may be successfully transplanted to fill up defects in bone. To show that foreign bodies are well borne he cites a case of amputation of the thigh, where, after curetting the medulla, a large tampon was left in the cavity for a year without exciting any disturbance. Birchner has treated twenty-eight cases of recent compound fractures by insertion of ivory pegs into the medullary canals of the fragments, and obtained twenty-four cures. In some instances it was necessary to extract the foreign body, but this never prevented consolidation.—*Centralbl. f. Chirurg.*, No. 27, 1892

The Local Treatment of Vaginal Ulcers with Alcohol.—Dr Barsony reports the case of a woman who was admitted to the hospital for operation upon a carcinoma of the vagina. Owing to the overcrowded condition of the hospital, operative treatment was deferred and the author, chiefly for the sake of cleanliness, washed the cancerous sore daily, later twice daily, with alcohol. Eight days later the sore had diminished to such an extent that the operation was again postponed. The ulcer healed completely, but two small sores reappeared which closed up after washing with alcohol. The patient left the hospital cured. In the case of another woman, in which a carcinoma of the vaginal portion of the cervix had been diagnosed, but operation refused, the author resorted to the alcohol washings with success.—*Wien. Mediz. Blatter*, 15, 1892.

The Treatment of Hernia by Injections of Alcohol.—This method introduced by Schwalbe, in 1882, is warmly recommended by Dr. A. Schmidt. He reports nine cases of hernia treated in this manner (five cases of umbilical hernia, one of abdominal

hernia and three of inguinal hernia). Of these seven patients have been completely cured. This method demands great endurance on the part of the physician and patient. The injections must be made under the strictest antiseptic precautions. After the hernia has been reduced the index finger of the left hand is introduced in the hernial opening, and under guidance of the finger the hypodermic needle is thrust in and pushed forward to the place where the alcohol is to be injected. Care should now be taken to observe whether any blood escapes from the needle, to make sure that no blood-vessel has been pierced. The syringe which holds 5 c. cm. is then attached, and the alcohol is slowly injected. In cases of umbilical hernia a dressing of adhesive plaster is applied. Patients suffering from inguinal hernia must remain three to four weeks in bed during the treatment. A truss should not be worn after the completion of the course of injection. The strength of the alcohol injected should be at first fifty per cent., increased to eighty per cent., but never above this. The quantity in children varies between 1 and 2 c. cm., in adults up to 5 c. cm. During the first days the injections may be practiced daily, later at longer intervals. The treatment is practically free from danger.—*Deutsche Zeitschr. f Chirurg.*, xxxiv.

Varicose Veins.—Dr. William Taylor, in the *Provincial Medical Journal*, advocates blistering. He discovered its good effects, accidentally, when treating a case of gout by means of blisters, and had since tried it in many cases with considerable success, and found it specially useful in old people. He considered blistering to be "eminently restorative" in varicose veins. Dr. Taylor did not believe in elastic stockings, and considered operative treatment unscientific. He supposed that the coats of the veins participated in some way which he could not explain, in the restored vitality set up by the action of the blisters. He found that the veins remained sound for several years, but were then apt to become distended again, and required the treatment to be renewed. Its great advantage was that it could be used in cases where palliative treatment was contraindicated, and that it always did good to the solid edema so often associated with the varicose condition. The details of the treatment were as follows: 1. Remove the cause. 2. Obviate the tendency. 3. Elevate the limb for twenty-four hours. 4. Blister from the foot upward, six inches daily, watching the kidneys and bladder. First paint the part with Rubini's tincture of camphor, then with blistering fluid, and lastly with collodion. The blisters must rise and serum be withdrawn to do good.—*West. Medical Reporter*, June, 1892.

Antiseptic Memoranda.

Lysol.—Cadéa and Guinard (*Province Med.*) have made a series of experiments on lysol, from which they draw the following conclusions: Lysol is superior as a microbicide to carbolic acid, creolin, cresyl, and other analogous products; it has not, however, any advantages over the antiseptics of established reputation. It is only really efficacious when used in solutions, which may be caustic and irritating. Although not destined to play a great part in surgery, it may often be useful in the prophylaxis and arrest of epidemics and epizootics. It is likely to be particularly serviceable in the disinfection of premises, privies, railway carriages, ships, wharves, stables and cow houses. It is readily soluble, sufficiently active, and very cheap.—*St. Louis Medic. Journal.*

Coffee as an Antiseptic.—The experiments of Luderitz, of Vienna, tend to establish the belief in the antiseptic properties of coffee. A strong solution of coffee, for example, ended the career of a bacillus of typhoid in about twenty-four hours, the active streptococcus of erysipelas in twelve hours, while not longer than from three to four hours was sufficient to kill the malignant comma bacillus of cholera. Strong decoctions acted more quickly still; the effects, however, are stated to be due more to the products of the roasting of the coffee than to the active principle of the berry. In this connection it has been pointed out by a correspondent of the *Indian Medical Gazette* that it would be worth while to substitute coffee for tea among the cases of enteric fever in the European military hospitals in India. Coffee also might be given a trial in the treatment of typhoid fever in this country.—*Medical Press.*

Asaprol, New Antithermic and Antiseptic.—This is the name given by Bang, its discoverer, to a calcium compound of alpha monosulphone of beta naphthol (*Nat. Drug.*). It is a neutral substance, soluble in water and alcohol, unalterable under heat, non-irritant, non-toxic, well tolerated by the digestive viscæ, whence it is rapidly eliminated and carried off by the urine. Asaprol retards cultures of bacillus typhoideus, the cholera bacillus, and the micro-organism causing herpes tonsurans, when used in quantities of 1 cg. to every cubic centimeter of the culture. When the quantity of asaprol is increased to 3 cg. to each cubic centimeter, the growth of these organisms is entirely prevented, though it requires double this proportion to prevent the growth of bacillus pyocyanicus. Streptococcus aureus and bacillus anthracis are controlled by a three per cent. solution.—*Weekly Medic. Review.*

Correspondence.

APOLLO, Pa., June 23, 1892.

To the Editor of International Journal of Surgery:

Please publish the following case. I Would further like to hear from yourself and others as to whether the bullet wound would be sufficient cause for epilepsy.

Mr. John T. Jackson, aged 54 years, with no family history of neuralgia, nervousness, paralysis, epilepsy or insanity, on December 13, 1862, received a gunshot wound in the abdomen. The ball entered one-half inch above and to the left of umbilicus, passing obliquely to the right and lodging in the right posterior portion near the crest of the ilium, where it could be distinctly felt. No effort was made to remove it. He recovered and returned to his regiment in 1863 and was discharged at the expiration of his time in May, 1864, though unable to do active duty after his return to his regiment.

In the summer of 1869, he was attacked with falling fits. An attempt was made to locate the ball, but it was found to have disappeared from its location in the crest of the ilium. The epileptic fits increased in frequency and severity until three or four months before death, when they would recur as often as ten or twelve times in twenty-four hours. Two months before his death he became violently delirious, which lasted about ten days when he recovered consciousness and was able to go about between the attacks of epilepsy, these seemed less severe with longer intervals; he was, however, very weak and took but little nourishment. On April 27, 1892, he was again attacked with wild delirium, which continued up to May 6th, when he became comatose and died May 6th, at 2 o'clock A.M. Eight hours after death a post mortem was made by myself assisted by Drs. Leech, Housholder and McBryar. On opening the abdominal cavity we found strong adhesions extending from two inches to the left of umbilicus, involving the whole right side of the abdomen, from the lower margin of the liver to the sacrum. No trace of injury to the intestines was discovered. After dissecting the strong adhesions the intestines were carefully removed. A conical-shaped Minnie ball, weighing about one ounce, was found, having a cavity in the base in which was firmly held a piece of bone evidently taken from its former location in the crest of the ilium and held firmly by the battered rim of the cavity.

It was encysted between the serous membrane and portions of the omentum, through which cyst ran the vessels of the right spermatic cord. All the parts had been dragged down and were adherent to the sacrum to the right of the rectum, the adhesions admitting of considerable motion of the cyst which contained the ball.

R. E. McCUALEY, M.D.,

Book Notices.

A PRACTICAL MANUAL OF DISEASES OF THE SKIN.—

By George H. Rohe, M.D., Professor of *Materia Medica, Therapeutics, and Hygiene*, and formerly Professor of Dermatology in the College of Physicians and Surgeons, Baltimore, etc., etc. Assisted by J. Williams Lord, A.B., M.D., Lecturer on Dermatology and Bandaging in the College of Physicians and Surgeons, Assistant Physician to the Skin Department in the Dispensary of Johns Hopkins Hospital. *No. 13 in the Physicians' and Students' Ready-Reference Series.* In one neat 12mo volume, 308 pages. Extra Cloth, price, \$1.25, net. Philadelphia: The F. A. DAVIS Co.

Written for the student and general practitioner, this book is thoroughly practical and free from elaborate discussions of the etiology and pathology of diseases of the skin. Although a good knowledge of these affections can only be gained by personal clinical observation, this book will prove a valuable auxiliary.

THE INTERNATIONAL MEDICAL ANNUAL AND PRACTITIONER'S INDEX.—A Work of Reference for Medical Practitioners. Tenth Year. New York: E. B. TREAT, 1892. Price, \$2.75.

This is a concise record of the year's progress in the different departments of medical science. A number of new topics are introduced, and we would refer to the excellent articles by Mr. Thornburn on "Spinal Surgery;" by Dr. Armand Ruffer on "Bacterial Pathology;" by Mr. Hurry Fenwick on "Cystoscopy;" by Mr. Greville Macdonald on "Rhinoscopy;" and by Mr. Pringle on "Photography in Clinical Medicine."

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES.—

A Yearly Report of the Progress of the General Medical Sciences throughout the world. Edited by Charles E. Sajous, M.D., and Seventy Associate Editors, assisted by over two hundred Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromo-Lithographs, Engravings and Maps. Philadelphia: The F. A. DAVIS Co., 1892.

It affords us much pleasure to announce to our readers the fifth issue of this excellent work, which has been received with as much favor in Europe as in America. This series of five volumes furnishes a complete review of the work accomplished during 1892, in the various branches of the medical art.

Volume III is devoted to surgery and among the editors of the different departments we find such well known surgeons as Professors Guston, Packard, White, Conner, Keyes, Stimson, Sayre, Tiffany, Kelsey, Barton, Laplace, Matas.

BOOK ON THE PHYSICIAN HIMSELF, AND THINGS THAT CONCERN HIS REPUTATION AND SUCCESS —

By D. W. Cathell, M.D. New Tenth Edition (Author's Last Revision). Thoroughly revised, enlarged, and rewritten. In one handsome royal octavo volume. 348 pages. Bound in extra cloth. Price, post-paid, \$2.00, net. Philadelphia: The F. A. DAVIS Co., 1892.

We have had occasion before to commend this unique work, which is the outcome of a ripe experience, good common sense and business sagacity. Although chiefly written for the benefit of the younger members of the medical profession, it will be read with profit and pleasure by many of "the older ones who have paused at less than the average degree of success in life." The fact that this book has reached its tenth edition within a short time, renders any extended comment superlative.

A TEXT BOOK OF THE PRACTICE OF MEDICINE FOR THE USE OF STUDENTS AND PRACTITIONERS.—

By R. C. M. Page, M. D., Professor of General Medicine and Diseases of the Chest, at the New York Polyclinic, Visiting Physician to Randall's Island Hospital, St. Elizabeth's Hospital, the Polyclinic Hospital, and the Northwestern Dispensary. New York: WILLIAM WOOD & Co., 1892.

Dr. Page has succeeded in producing an excellent clinical treatise, which cannot fail to become popular with students and practitioners. The book is thoroughly practical, the etiology and pathology of the various diseases are briefly discussed, while, especial attention is given to the symptomatology and treatment. In place of the therapeutic nihilism which prevails in many of our text books, we find a large amount of practical information as to treatment, with prescriptions that have proved especially useful in the author's hands.

The Transactions of the Second Annual Meeting of the Association of Military Surgeons of the National Guard of the United States. Held at Memorial Hall, St. Louis, Mo., on the 19th, 20th and 21st of April, 1892. St. Louis: Becktold & Co.

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Authors favoring us with Original Articles should do so with the understanding that they are for exclusive publication in this Journal. Any deviation from this rule must be specially mentioned at the time of sending the manuscript.

Though not required for publication, all communications must contain the author's name and address, otherwise no attention will be paid to them.

Editorial Department.

NEW YORK, OCTOBER, 1892.

A CANADIAN VIEW OF AMERICAN SURGERY.

In the address on surgery delivered before the British Medical Association at its late meeting, Dr. W. H. Hingston, of Montreal (*Lancet*, July 30, 1892), contrasted the surgeon's life on the Western continent with that on the eastern side of the Atlantic. It appeared to him that life in England is calm and placid when compared with that in America, and that the average American surgeon is more of a man of action than his English cousin. This state of unrest everywhere, but especially in the Western world, is, he thought not favorable to the surgeon, the full capacities of whose intellect are not unfolded without sufficient occasional leisure and thought and retirement, all of which are, in some measure, denied him in our new and over-active world. In consequence of this the surgeon is made to eschew the more meditative habits which would the better fit him to weigh well and to adopt or reject what should be adopted or rejected without reference to authority or without being swayed by the influence, not always safe and reliable, of superiority of position or of condition. An opinion hurriedly expressed by eminent, or even prominent, or perhaps only self-beguiled authority is adopted; it is propagated, it becomes the opinion of the general body; and although we may have resisted the influence of the individual authority in the first

instance, we finally succumb to the voice of that general body of which we are constituents. The views expressed on surgical questions, expressed before they have been fully considered; hasty reports of surgical cases and premature records of surgical operations—especially if they have been bold and novel—when published within a few days of their performance, are often misleading. Dr. Hingston thinks that if the publication of so-called successful cases in medical journals had for its sole object the elicitation of truth, error in time would be of small moment. The haste in publishing, he says, enables the operator to send copies broad-cast over the land as a bid for like operations; and he does not consider the journalist as quite blameless in facilitating the premature publication of cases. In comparing the journals of both hemispheres, he has noted a greater precision of reporting cases and in stating facts in the English publications, and has observed the same features in discussions before English societies. He attributes the absence of that precision in a great measure to the hurry and unrest, the variety of fatiguing work our surgeons are called upon to do, and the difficulty, even in cities, of having properly qualified assistance. It is from this hurried manner of reporting cases in America that doubt is sometimes felt of their credibility when given without reference to minor parts which are not considered essential to their truth.

The American surgeon, according to Dr. Hingston, arrives in his own way and with marvelous celerity, at the chief points of a case—at its gist, its essence—by a process which may not be strictly logical, but which partakes rather of an intuitive intellectual judgment or perception. He seems to recognize truth, or something he takes to be truth, without any elaborate process of ratiocination. Commenting upon the relatively greater freedom from death which Valentine Mott, more than half a century ago, claimed for surgical operations performed in New York and Philadelphia, he claimed a still smaller mortality for operations performed in the large cities of Canada.

Want of space forbids us from quoting more liberally from this excellent address. It is probably true that the American surgeon is more of a man of action and less of a student than his English confrère, but this distinction is much less marked now than formerly. There is growing up in this country a class of scholarly surgeons—men who are not only thor-

oughly conversant with the surgical literature of America, but with that of Europe. Every one, however, will agree with Dr. Hingston in his plea for a proper mental outfit for those who are to devote themselves to the study of surgery.

DISEASES OF THE LIVER AND SURGICAL OPERATIONS.

A knowledge of the various factors which influence the prognosis of surgical operations, is of importance to every practical surgeon, and anything which throws some light upon this still obscure subject, cannot but prove of general interest. In an excellent article in the *Bulletin de l'Académie de Médecine*, Aug. 3, 1892, Prof. Verneuil, one of the most distinguished of French surgeons, discusses the prognosis of surgical procedures performed on persons suffering from chronic diseases of the liver. In 1846 he observed a case of cirrhosis which terminated fatally in consequence of a single abdominal puncture. This case was not published until 1875. Although in these days of improved antiseptic methods, some surgeons deny the existence of such dangers, or believe that they have been greatly exaggerated, the author considers this an illusion. Formerly in operations upon persons suffering from hepatic troubles, there was great risk of aggravating the disease by the development of local conditions of more or less gravity, such as phlegmons, gangrene, hemorrhages, etc. At the present day, while these complications are hardly to be feared, the danger still exists of increasing the liver trouble. In support of this view, M. Verneuil records the following three cases, which we have briefly abstracted. The first was that of a woman, thirty-eight years old, who had suffered from dyspepsia and hepatic trouble. In December, 1891, she sustained a bimalleolar fracture, with marked subluxation of the foot. After unsuccessful treatment by splints arthrotomy was resorted to, and the dislocated astragalus returned to its normal position. Everything progressed satisfactorily, but on the third day there was a slight rise of temperature, with general icterus which became more and more marked. Pneumonia of the right lower lobe developed, sharp pains were felt over the liver which appeared enlarged, and death ensued three weeks after the operation from exhaustion. The autopsy revealed a large liver of the type of hypertrophic cirrhosis, pneumonia on the right side, pleurisy on the left. There had been no pus formation during the entire course of treatment. The second patient had suffered five years from profuse metrorrhagia, due to a large uterine polypus. She was very anæmic

and had been troubled with dyspeptic symptoms, vomiting after meals and diarrhoea; the liver was somewhat diminished in size and tender on pressure. Septic symptoms existed, but as an operation seemed urgently demanded, the polypus was rapidly extirpated with the ecraseur, under strict antiseptic precautions. Death occurred three days later and at the autopsy nothing was found to explain the rapidly fatal termination except an advanced steatosis of the liver. The third patient, a woman, sixty-seven years old, had suffered for some time from typical symptoms of cancer of the liver. She was admitted for relief of a strangulated crural hernia, and in view of the urgency of the case kelotomy was at once resorted to, no attempt being made to obtain a radical cure. The operation was successful and afforded rapid relief, but on the tenth day after the strangulation pneumonia developed, and death took place from profound exhaustion on the seventeenth day. The autopsy showed no peritonitis nor any lesions attributable to the operation.

In these cases the conditions for which the operations were undertaken, could not, in themselves, be held responsible for the fatal termination. Under ordinary circumstances death does not usually ensue after surgical procedures in cases of fracture, benign tumors, and strangulated hernia in its early stages; moreover the operation itself was perfectly successful and unattended by local traumatic complications. Yet in each case death supervened rapidly, unexpectedly, and could not be explained by the old theories, but seemed to be due to a complex mechanism. It seems natural to attribute the fatal end to the pre-existing hepatic affection, which was evidently rendered more severe by the surgical traumatism. M. Verneuil does mean to say that the presence of a hepatic lesion is a contra-indication to operative interference, but desires to call attention to the necessity of determining those cases where surgical interference must be interdicted, or where it may be safely permitted. If the three deaths were attributable to the hepatic trouble, it would have been proper to have directed the chief therapeutic efforts for the relief of the latter. From many observations made by M. Verneuil it seems that the different hepatic lesions do not affect the prognosis of operations to quite the same extent. On the contrary, there is a scale of gravity which may be arranged somewhat as follows: cancer, cirrhosis, the various forms of steatosis (alcoholic, suppurative, hemorrhagic), biliary lithiasis. Next in point of gravity are, perhaps, amyloid degeneration, chronic congestion and hydatid cysts.

Original Articles.

THE WEIGHT OF THE BODY IN ITS RELATION TO THE PATHOLOGY AND TREATMENT OF CLUB FOOT.*

By A. B. JUDSON, M.D.,

Orthopaedic Surgeon to the Out-Patient Department of the New York Hospital.

I desire to present a few thoughts, of an extremely practical kind, relating to the treatment of talipes equino-varus. Beginning with congenital club-foot, it is well to bear in mind that there is a vast difference between a child recumbent and a child walking. While the child is in arms the case is yet free from the complications and difficulties caused by the falling of the weight of the body on the deformed foot. These twelve months, more or less, are the most important year in the history of the case, because in this period, the foot is to be changed so that, when the child begins to walk, the use of a slight walking-brace, exerting only a moderate degree of force, will convert the weight of the body from a deforming to a correcting agent. During these months of recumbency, with the weight of the body out of the way, with all the tissues soft and formative, and the foot more than doubling in size with the growth of the child, there is every reason to expect to succeed in what we undertake, provided time enough be given to the case, and faithful attention to the details.

The apparatus which I have conveniently used to effect this reduction, before the child learns to stand, is a simple retentive splint which acts as a lever, making pressure on the outer side of the foot and ankle, at A, in Figs. 1 to 4, inclusive, and counter-pressure at two points, one on the inner side of the leg, at B, and the other at the inner border of the foot at C. It is advisable to keep in mind that this simple instrument is a lever, because, if we know that we are using a lever, with its three well defined points of pressure, we can make the apparatus more efficient than if we view it, in a more general way, as an apparatus for giving a better shape to the foot.

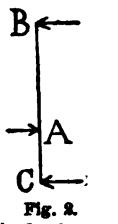


Fig. 2.

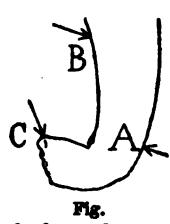


Fig. 3.

I use a little brace made of sheet brass, doing the work with a few simple tools. An advantage of doing the work one's self is that there is no room for doubt,

as to where the blame lies, if the apparatus does not work well. Two curved disks, B and C, Figs. 3 and 4, are riveted to a shank D, and thus is formed that part of the brace which applies the two points of counter-pressure, while on the other hand, the point of pressure is brought into action by a third disk, or shield A, which is drawn tightly against the outer side of the foot and ankle, and held in place by a strip of adhesive plaster, E, which includes the limb and the piece which connects the two disks, B and C. The disks are lined with two or three thicknesses of blanket, easily renewed, when necessary, with a needle and thread. These braces are so cheap and easily knocked together that it is nothing to apply new and larger ones, using heavier material for the shank as the child grows. In general, three sizes will be enough, the shanks being 12 gage $\frac{3}{8}$ in. wide, 14 gage $\frac{1}{2}$ in. wide, and 16 gage $\frac{5}{8}$ in. wide. The disks are conveniently made from 22 gage $1\frac{1}{4}$ in. wide. The rivets are copper belt rivets No. 13. A lip turned on the edges of the disks, with the flat pliers, gives stiffness to the thin brass, and protects the skin from the rough edge. If more easily obtained tin disks, light bars of iron or steel, and ordinary iron rivets, would doubtless answer.

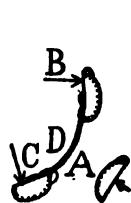


Fig. 3.



Fig. 4.

The brace is applied with three strips of adhesive plaster. The upper and lower pieces, F and G, Fig. 4, are simply to keep the apparatus in place, which they do effectively, if ordinary gum plaster is used, while, by drawing the middle strip, E, tightly over the shield, and straightening the brace from time to time, the deformity is gradually and gently reduced. At each re-application the brace is made a little straighter than the foot at that stage. This may readily be done by the hands, and then the adhesive strip is to be tightened over the shield, till the shape of the foot agrees with that of the brace. After a few days, the brace is to be made still straighter, and again reapplied, and made tight until another point of improvement is gained. The brace is applied very crooked at the beginning of treatment, as in Figs. 3 and four, and is straightened from time to time, and a longer brace applied as the deformity is reduced and the patient grows. It should be removed every week, or two weeks, and an interval of a few days allowed for freedom from the brace, when the mother is advised to manipulate the foot constantly, using as

* Read before the American Orthopaedic Association, New York, September 21, 1892.

much force as she will in the direction of symmetry. Manipulating the foot during these intervals is of great importance, as cases have occurred in which varus and equinus have been entirely overcome by the mother's hand alone.



Fig. 5.



Fig. 6.

By this simple and prosy treatment, carried out systematically and without haste or violence, or pain, the foot, unless it is a frightful exception, may with certainty, be changed from varus to valgus. At the same time, the tendo Achillis is lengthened till the position of the foot is near the normal, or at right angles with the leg, as the result of manipulation and giving the brace from time to time a partly antero-posterior action. Figs. 3 and 4 show approximately the shape of the brace at the beginning of treatment, Figs. 5 and 6 when the varus is reduced, and Figs. 7 and 8 when valgus has taken the place of varus. The foot, in this latter stage, may not hold itself valgus, when left to itself but, with almost no force, and with one finger, it may be pushed into valgus; and in this condition it must be when the child begins to walk, and then another stage of treatment begins.



Fig. 7.



Fig. 8.

When the patient begins to walk we have a new difficulty. It is now seen that the weight of the body, falling on the tender and ill formed foot, will, if not properly directed, defeat all our efforts. Let us, for a moment, consider the mechanical environment of the human foot. In the first place, the corporal weight, which the quadruped distributes among four pedal extremities, falls, in man, upon two. Again the small floor area covered by the feet and their slight structure, seem unequal to the task of supporting the towering frame above them, which in some cases almost resembles a period resting on its apex. And when we observe the effect of active locomotion, we see weight and momentum combine in an apparent effort to crush and destroy. And furthermore, when

extraneous weights are added and the strain is prolonged, as in the case of the burden-bearer among savage tribes, or the infantry soldier on a forced march, the endurance of the foot excites wonder. It is not strange that the feet are subject to ailments: to blisters, bunions, ingrowing nails, hallux valgus, hammer toes, loss of the arch, weak ankles, painful affections of the metatarsus, perforating ulcers, osteitis, and the varieties of talipes. The wonder is that they are not permanently disabled soon after walking is begun, and certainly when the adipose tissue of the body takes on the development which accompanies age and good living. The gourmand, Savarin, said, that among the works of creation, the design of the human foot was a conspicuous failure. Considering the immense weight carried by the foot, it is evident, however, that only the most perfect natural adaptation of mechanics has enabled this insignificant member to perform its superlative functions, and that great caution should attend all procedures having for their object its artificial reconstruction.

It is also sufficiently evident that the correction of club-foot by mechanical means, while the patient continues walking, is a problem beset with difficulty. We have, however, a luminous ray of hope and encouragement in the observation that, in talipes varus, there is an important boundary line between deformity and the norme. If the foot is held in some way, now to be considered, on the right side of this boundary line, each step forces it in the direction of valgus and the increasing weight of the child is a powerful force acting in the right direction, or away from varus, so long as the foot is held, though never so little, looking toward symmetry. It may be said that the child stamps his foot straight. If, on the other hand, the foot is held, or allowed to fall, on the wrong side of this line, though never so little, each foot-step is a blow, driving the foot more and more into the varus position.

This point may be illustrated by the hand placed with its ulnar border on the table. If considerable pressure be made on the table, by the hand so placed, it becomes evident that there is a boundary line between pronation and supination. If the hand is pronated, never so little, additional pressure will force the palm into pronation, which represents valgus in the foot, and if the hand be supinated in the slightest degree, additional pressure will force the palm into complete supination, which represents varus in the foot.

By the application of this idea, the weight of the body may be made a beneficent, instead of a harmful factor in the progress of a case of talipes varus, and the walking brace should be constructed with this in view. It should be made of steel and by an instrument

maker. One of its functions is to act as a lever, but the leverage is applied not chiefly to overcome the deformity by direct force, as in the retentive brace above described, but to hold the foot on the right side of the boundary line above mentioned, so that the weight of the body may straighten the foot, or overcome the varus in a direct and forcible manner, without general or local inconvenience.

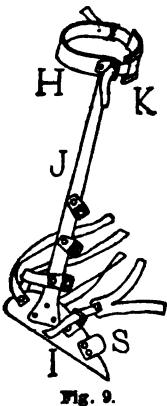


Fig. 9.

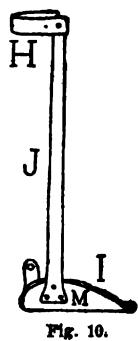


Fig. 10.

The walking brace consists, as usual, of leg-band, H, Figs. 9 and 10, foot-piece, I, and upright, J, riveted firmly together. A movable joint at the ankle should be discarded, as it undermines the lever by introducing an element of instability and, in this brace, serves no good purpose. Mild steel alone should be used, to facilitate alterations in shape, as point after point of improvement is gained, and to make easy the shifting of buckles and straps, as may be required, all of which may be done by the use of a few simple tools. The upright is to be on the inner side of the leg, as in Fig. 14. The upper part of the brace makes counter-pressure on the inner side of the leg, but it has another important function, in previously neglected cases, which is secured by the steel band passing across the back of the leg, to which are fastened two buckles for the attachment of a piece of webbing, K, in Fig. 9, which passes across the front of the leg. The steel band should make no pressure on the limb as its use is simply to furnish attachment to the buckles. A piece of webbing spanning the front of the leg in this manner and carrying a pad, performs an important service in cases, like the one shown in Fig. 12, in which, from previous neglect, the varus has not been reduced before walking begins. It transfers a part of the weight of the body from the anterior part of the sole of the foot, where it interferes with the correction of the varus, to the upper part of the anterior surface of the leg, where it is powerless to interfere with the treatment. That the weight-pressure thus transferred is considerable, is shown by the callus and bursa which appear where the padded strap crosses the leg

near the tubercle of the tibia. This mechanical effect is similar to that of the brace, shown in Fig. 11, used in the treatment of paralysis of the muscles of the calf, resulting in talipes calcaneus.

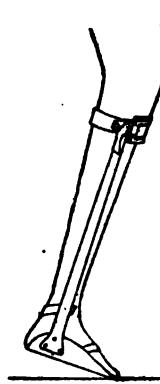


Fig. 11.



Fig. 12.

The upper part of the brace is also to be considered in another light as follows: In previously neglected cases it is well to incline the upright 15°, or 20°, or more, backward from the vertical of the foot-piece, as is shown in Fig. 9. Although correction of the equinus is postponed by this inclination of the upright, we are thus enabled to apply a better leverage against the varus, and when the varus is reduced, and the time arrives when the equinus is to be corrected, this backward inclination of the upright is to be lessened from time to time, till the vertical is reached, as in Fig. 10, or till the upright has an inclination forward, allowing the corporal weight to fall more and more on the anterior part of the sole of the foot, and gradually lengthen the tendo Achillis. The vertical upright, Fig. 10, is to be applied at once to patients in whom the deformity has been corrected before walking begins.

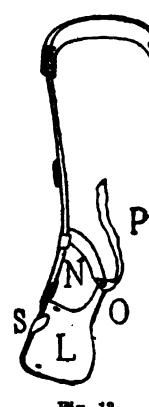


Fig. 13.

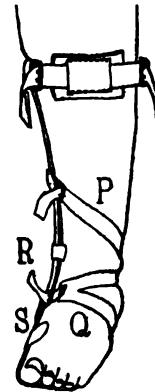


Fig. 14.

We will now pass to a consideration of the other end of the brace, the foot piece, which is to be made of sheet steel ranging from 18 gage, for a child learning to walk, to 13 gage for an adult. It has the usual tread, L, Fig. 13, and riser, M, Fig. 10. The heel-cup is formed by a piece of webbing, N, Fig. 13,

passing behind the heel, from the lower part of the upright to a spur, O, Fig. 13, which projects upward from the back part of the outer border of the tread. Viewing the apparatus again as a lever, for the forcible reduction of varus, in a previously neglected case, counter-pressure is made along the inner border of the foot, and on the upper part of the inner side of the leg, while pressure is made by one strap, or more than one riveted and buckled to the foot-piece and the upright. But one strap is shown, P, in Figs. 13 and 14. This will be sufficient in the case of a child whose varus has been corrected before walking begins, but in a previously neglected patient, in whom the varus has yet to be reduced while the child is active on his feet, two, three, or more straps may be added as shown in Fig. 9, partly encircling the foot, ankle and leg, the positions of the buckles and the straps being where they will assist most efficiently in opposing the varus and holding the foot in the best position to receive the weight of the body. These parts of the apparatus may be shifted many times, with advantage, in the treatment of a given case of unusual difficulty, and, in addition, a most efficient agent for applying continuous pressure, is found in a strip of adhesive plaster, Q, Fig. 14, sewed to a piece of webbing, R, the plaster partly encircling the foot and ankle, with a single tail or two tails, as may be required, and the webbing being drawn tightly and buckled to the inner side of the riser. This device does more than simply to increase the amount of pressure; it also keeps the heel down on the tread of the foot-piece, and, more important still, it gives the foot a rotation outward and thus directs the sole of the foot forcibly toward the ground, in the best position for making the weight of the body a corrective instead of a deforming force. The riser of the foot-piece may also, in previously neglected and difficult cases, carry an ear, S, Figs. 9, 13 and 14, made of sheet brass, which is to be bent downward over the first metatarsophalangeal joint, to prevent the inner border of the foot from over-riding the edge of the riser. The foot-piece is to be lined with adhesive plaster, in several thicknesses, if necessary, to prevent rust, and with a piece of leather fastened to the tread and spur with copper rivets, as shown in Fig. 10. In practice the details demand as much attention as the principles of treatment. The brace is to be applied over the stocking, the strap R, passing through a hole cut in the stocking, and is hidden by the patient's trouser's and shoe.

We will now consider the upright of the brace: It is a flat, tapering bar of mild steel and when first applied to a previously neglected case, such as is shown in Fig. 12, should have a curve resembling that of the varus foot. The bar, though sharply curved, as

in Fig. 13, should, however, be somewhat straighter than the foot, when the latter is forced manually into its best position. The multiple straps, shown in Fig. 9, should then be buckled and tightened daily till the



Fig. 15.

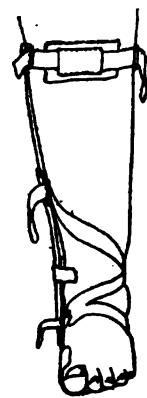


Fig. 16.

continuous leverage has partly reduced the varus. The upright bar should then be somewhat straightened and another point of improvement be gained, the patient in the meantime following his ordinary pursuits without interruption. In due time the upright bar, and the foot itself, will both be straight, as seen in Figs. 15 and 16; in other words, the varus will be reduced. The upright should then be bent, from time to time, in the direction of valgus, as seen in Fig. 17, and the persistent and gradual effort resumed until the foot has been pushed, or pulled, or pried, over the boundary line, into the domain of valgus, as seen in Fig. 18. These efforts would not be necessary if the varus had been converted into valgus before the child had learned to stand. In very badly neglected cases the interference of the weight of the body with the treatment may be prevented by the recumbent position, or the use of a high sole on the well foot and the ischiatic or axillary crutch, until the varus has been materially reduced. In all cases when the child



Fig. 17.

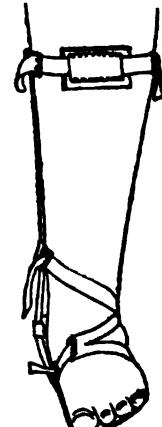


Fig. 18.

is old enough to be docile, domestic instruction and drill in eversion of the foot, and in the proper man-

agement of the foot in locomotion, should be a part of the education.

As soon as the foot has reached the valgus shape, whether it be at the moment of learning to walk, or only after prolonged effort, in a neglected case, a curious effect will be observed. It will be seen that the outer border of the tread of the foot-piece is raised from the ground, as seen in Figs. 19 and 20, and that we have secured, in a convenient manner, the effect which is sometimes sought by building up the outer border of the sole of the patient's shoe. This is a welcome and powerful ally in our attempts to hold the foot in a favorable relation with the weight of the body and the ground.



Fig. 19.

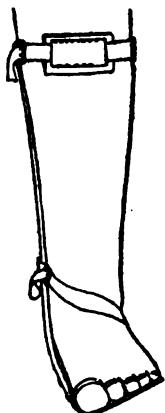


Fig. 20.

perfect in its ability to perform all the duty of a foot congenitally normal.

Although congenital club-foot has been chiefly kept in mind in the above pages, the views expressed in regard to the influence of the weight of the body are applicable also to talipes varus of paralytic origin. In this affection, at an early stage, and before the foot has lost its flexibility, a simple walking brace is needed as in Figs. 19 and 20, to properly direct the action of the weight of the body on the paralyzed foot. At a later period, if this measure has been neglected, and the foot has been allowed to become varous, and more or less inflexible, the case will require more attention and probably prolonged effort, with multiple straps and adhesive plaster, to carry the foot across the line between deformity and the norme, to the position in which the weight of the body shall be a correcting and not a deforming force.

SUPRAPUBIC CYSTOTOMY.

BY E. C. BUELL, M. D., Los Angeles, Cal.

The patient, Robert B., German, aged forty-two years, had a history of bladder disturbance extending from 1873 to 1882.

Bright's disease of the kidneys had been the diagnosis. In July of 1882, he came under the care of Dr. Robert A. McLean, of San Francisco, Cal., who promptly recognized the presence of stone in the bladder. Dr. McLean, on July 22, 1882, removed a large calculas by the bilateral method, through the perineum. His subsequent treatment I have been unable to learn, but the patient says that he had a fistula which continued to dribble urine for six months.

For several years following this operation, the patient was comparatively free from bladder trouble. Gradually, however, the old symptoms returned, and in July, 1891, he consulted Dr. Edgar L. Clark, of Los Angeles, Cal., for relief from symptoms of cystitis. Vesical irritation and dysuria were severe. Urine turbid, ropy and bloody. He was obliged to empty the bladder about every hour of the twenty-four. Dr. Clark determined upon washing out the bladder, but finding it nearly impossible to pass a small catheter, proceeded to stretch the urethra with steel sounds, the patient being anæsthetized. The first sound passed "clicked" the stone, thus establishing the diagnosis. Some weeks later, I was called to the case by Dr. Clark.

The patient's condition was deplorable, and there was every reason to believe that he would soon succumb to the disease unless relieved.

On October 22, 1891, assisted by Drs. Clark, Kirkpatrick and Wheeler, of Los Angeles, and Dr. Hodge, of Pasadena, I proceeded to remove the stone. The patient's surroundings were of the poorest description, but every precaution was exercised to make the patient and the operation aseptic. I determined upon the high operation, with a view to keeping the wound open indefinitely, in order that the chronic cystitis might be effectually treated and cured. The bladder was washed clean with Thiersch's solution.

The patient being thoroughly anæsthetized, the pelvis was elevated about six inches higher than the head. A rubber bag inserted in the rectum was distended with six or eight ounces of water. Seven ounces of Thiersch's solution—all the bladder would retain—was injected and retained by ligating the penis with a rubber band. An incision of less than three inches in length was made in the median line of the abdomen, and carried down to the prevesical fat. The margins of the wound were held back by blunt retractors, while with blunt curved scissors the muscular attachment to the symphysis pubis was divided laterally for about an inch on either side, giving more room without endangering the peritoneum. The prevesical fat was then displaced and rolled up with the fingers, being held in the upper angle of the wound by a third retractor. No sight of the peritoneum was obtained, and no vessels were divided, either in the line of incision or on the bladder wall, that required ligature. The increased room derived by detaching the muscles from the symphysis pubis exposed the greater portion of the anterior bladder wall. This was caught up by silk sutures passed through the vesical wall on either side of the proposed incision, and cut sufficiently long for assistants to draw the bladder well up into the abdominal wound and hold it there.

A sharp pointed curved bistoury was then thrust through the bladder wall well down behind the symphysis and the incision quickly extended for about one and a-half inches. The index finger, which I believe preferable to forceps, was immediately introduced into the bladder and the stone located, quite firmly imbedded in the left wall near the neck. It was dislodged and rolled to the external wound with the finger, where it was easily grasped and removed with the forceps.

The bladder was now carefully explored for other stones or growths, and then washed with Thiersch's solution, and the rectal bag withdrawn. A Tredelenburg T-tube made of white rubber tubing, with a quarter inch lumen, was then carried down to the vesical neck, and the rubber band removed from the penis. The upper angle of the abdominal wound was closed with a catgut suture carried down through

the borders of the recti muscles. A rubber tubing of sufficient length to reach a receptacle under the bed, was next attached to the T-tube by means of a short glass tube, and the syphon drainage of the bladder begun. The wound was closely packed around the drainage tube with iodoform gauze and the usual iodoform and bichloride gauze dressing applied over all.

The stone removed—one of phosphate of lime—measured four and one-half inches in its greater and three and three-quarter inches in its lesser circumference; weight one ounce avoirdupois.

The subsequent history of this case was one of uninterrupted recovery. The highest temperature was 99.2° F. On the tenth day the T-tube was removed and a soft rubber tube, fenestrated at the lower end, replaced it. The external wound was kept open by the iodoform gauze packing, and the bladder washed daily for four weeks, when the catarrhal inflammation seemed entirely removed, the urine at this time passing normally, and two weeks later the external wound closed.

I believe the filling of the bladder with a mild aseptic solution like Thiersch's, after it has been thoroughly washed, possesses some advantage, as the abdominal wound is thus flushed with a harmless solution the instant the bladder wall is incised.

A CASE OF DOUBLE SCROTAL HERNIA OF TWENTY YEARS' DURATION—STRANGULATION ON THE LEFT SIDE—OPERATION WITH RAPID AND COMPLETE RECOVERY.

BY C. E. SMITH, M.D., La Grange, Tex.

I was called to see Wm. Pope, male, colored, about fifty years of age, by occupation a drayman and warehouseman, who had suffered for twenty years from a double scrotal hernia. Upon my arrival I found the patient in a state of collapse, with stercoraceous vomiting which would occur at intervals of about fifteen minutes. The temperature was subnormal, down to 92° F., the pulse rapid, weak and intermittent. The scrotum was about the size of a large cocoanut. Taxis was employed to reduce the hernia which proved successful on the right side, but failed on the left. The patient seemed to be sinking rapidly from exhaustion caused by the vomiting or rather heaving, for by this time about all of the contents of the stomach and bowels had been vomited.

An operation was advised as the only means of relief, with the possible chance of recovery. The danger of the patient's condition was explained to his relatives and friends as compared with the danger and gravity of the operation. The patient expressed his

willingness to die rather than to suffer his tortures any longer and it was agreed to operate. The necessary preliminaries for an "antiseptic" operation were hurried in view of the urgency of the case, and in the absence of a suitable table the patient was placed on an old quilt spread upon the floor, and while he was being etherized by an assistant, the parts to be operated upon were being cleansed in the usual way. Within ten minutes the patient was completely anaesthetised and ready in every way for commencement of the operation. Suffice it to say that in the operation no definite routine could be carried out; emergencies, as they arose, had to be met, which made the operation one entirely peculiar to itself. Seated upon an inverted water bucket placed between the patient's thighs, with a scalpel from my pocket case I made an incision from half an inch above the internal abdominal ring through the integument down to the tunica vaginalis and reaching to the bottom of the scrotum, about seven inches in length. I then attempted to divide the tunic on a grooved director, but it was so adherent to the contents of the scrotum that it was impossible to do so. The fingers and handle of the scalpel were used to break up and tear apart the adhesions. The tunica vaginalis and sac were nicked a little with the point of the scalpel to give a starting point of entrance into the sac, which was composed of parietal peritoneum.

The tunica vaginalis, the sac and its contents, which consisted of omentum, a portion of the colon, and a nuckle of the small intestine which lay anterior to the colon, completely investing the latter with an overlying covering of mesentery, and the testicle and spermatic cord were so thoroughly agglutinated that the whole presented the appearance of one solid mass.

About one inch above the globus majus, there was an aneurism of the spermatic artery, about the size of a large filbert. The testicle was very much atrophied and seemed to have been reduced to a soft fluctuating pultaceous mass. There was no pulsation of the aneurism or cord; the blood supply had been entirely arrested. An incision was made into the testicle, its contents being found to resemble very much those of an abscess. The aneurism, as it did not pulsate, was cut into and a clot of blackish-looking blood turned out. As the cord did not pulsate at all, it was thought best to remove both the cord and testicle. The forefinger of the left hand traced the cord, breaking up the adhesions until the internal abdominal ring in the fascia transversalis was reached. Here the adhesions were so enormous that it was impossible to break them up without first laying wide open the inguinal canal. A blunt pointed bistoury was passed and the cord cut in two in the inguinal canal midway

between the external and internal abdominal rings. The cord and testicle were then removed without the loss of one drop of blood and without ligating a single bloodvessel, torsion not even being required. In fact, it was an entirely bloodless operation. Next, the sac was torn from the tunica vaginalis and opened, and seven and one-half inches of mesentery cut away and removed, which enabled me to separate the nuckle of the small intestine from that of the colon. The latter just where the nuckle of the small intestine invested it on its anterior surface, for an area about the size of a silver dollar had commenced to turn blackish, indicative of incipient gangrene.

The forefinger of the left hand was then passed into the inguinal canal up to the internal abdominal ring in the fascia transversalis where the agglutinated mass, already mentioned, opposed. The tissues from within outward were then brought between the forefinger and thumb by gentle squeezing for the purpose of detecting the obturator artery. As no pulsation whatever was detected, a blunt-pointed bistoury was passed along the palmar surface of the left forefinger, as a guide to the internal abdominal ring, and the entire inguinal canal was laid open up to this point. The primary incision which began a half inch above the internal ring was extended upward a distance of an inch and a-half, making the entire length of incision nine inches. The adhesions in and around the internal ring were then broken up and the small intestine returned into the abdominal cavity.

A straight needle armed with catgut was passed from side to side, through the anterior surface of the colon just above and below the gangrenous area, the ends of the catgut being held by the assistant to prevent escape of the colon into the abdominal cavity. The incision in the scrotum was closed with silk suture up to midway between the external and internal abdominal rings. The colon was returned into the abdominal cavity and stitched to the abdominal wall with fine catgut, the line of stitches radiating around and outside of the gangrenous area, and then the two former sutures which held the colon and prevented it from escaping into the abdominal cavity were removed. The incision through the abdominal muscles from above downward was closed with silk suture to within a-half inch of the internal abdominal ring, leaving open at this point an area about the size of a silver dollar, corresponding in size to the gangrenous area in the colon.

The hernia on the right side was easily reduced and was operated upon after the method of Prof. J. D. Bryant, which is as follows:

After the neck of the sac had been ligated a looped ligature by means of a large needle was carried through the lower extremity and tied. Two parallel incisions

were then made an inch and a-half apart, the lower one being made one and one-half inches above the border of the internal pillar, corresponding in length with the width of the sac. The external pillar was treated as nearly as possible in the same manner, the first incision being located a little below its upper border. The sac was then carried upward behind the internal pillar, and drawn through the upper slit of the same pillar; then it was carried behind the external pillar and out through its upper slit, and returned again by being pushed inward through the lower slit of the same pillar. The sac was then drawn tightly until the borders of the external ring approximated, when they were sewed with catgut, the stitches being carried through the walls of the sac lying beneath. It is claimed by Prof. Bryant that this "weaving" process not only thoroughly closes the external abdominal ring, but also introduces additional layers of peritoneum in front of the weakened point in the abdominal wall.

The wounds were cleansed by washing them with a solution of bichloride 1-500 and dusted with iodoform. A piece of Lister's protective was placed over either side, followed by iodoformized gauze, a batch of absorbent cotton and a bandage, which completed both operations. The time consumed was one hour and thirty-five minutes. Patient rallied nicely from the anaesthetic and the stercoraceous vomiting ceased from the time the operation was commenced. Within eight hours from the completion of the operations, the gangrenous area in the colon sloughed out and a copious discharge of faeces occurred through the artificial anus thus formed. The sutures held the colon firmly to the abdominal wall and perfect adhesion resulted. The scrotum was kept perfectly aseptic with antiseptic dressings which were covered with oiled silk, and the scrotal wound healed by first intention.

A piece of large rubber tubing, four inches in length, was introduced into the artificial anus to the depth of an inch, or just far enough to enter the colon which lay posterior and adherent to the abdominal wall. A large thread was passed through either side of the rubber tube one inch above the end which rested just inside the colon. The two ends were carried around the patient's body and tied to prevent the tube from escaping into, or slipping out of the colon. The faeces were permitted to discharge involuntarily through the tube in the artificial anus for two weeks to insure permanent adhesion of the colon to the abdominal wall, at the end of which time the colon was washed out from above, through the tube in the artificial anus, with a fountain syringe containing a half gallon of solution of bichloride 1-2,000, most of which escaped back through the tube. A half

gallon of tepid water was then introduced by enema until it appeared in the tube, when it was stopped before allowing any of the water to escape through the tube. Within half an hour the enema was evacuated through the natural way, and two hours later the washing and enema were repeated in the same manner. The edges of the artificial anus were freshened with the point of the scalpel. A piece of Lister's protective was placed over the opening and its edges made to approximate with strips of rubber adhesive plaster, over which was placed a quantity of iodoformized gauze; then a batch of absorbent cotton and a bandage were applied which completed this the last of the three operations.

From this time on the patient evacuated the bowels through the natural passage and the artificial anus healed nicely and rapidly by granulation, only a few dressings with carbolic ointment being required.

The patient's temperature never went above $102\frac{1}{2}^{\circ}$ F. at any time, and this was reached only once—on the morning after the double operation. The patient was not allowed to stand on his feet for six weeks, or for one week after the artificial anus had healed and all dressings had been removed from the parts. A suitable double truss was then fitted and the patient allowed to sit up tentatively for a few days, then permitted to walk around in the house for a day or two, when he was "set free" and told to go. It is now thirteen months since the operation, and the patient returned to his old occupation eight months ago and is performing his daily work as drayman and warehouseman with perfect comfort and ease to himself and with entire satisfaction to his employer.

A CASE OF PERFORATING APPENDICITIS: OPERATION AND RECOVERY.

By J. W. MACQUILLAN, M.D., Cleveland, Tenn.

On the 12th of July I was called to see a patient with the following history:

I found a young man twenty years of age suffering from acute pain, with exquisite tenderness on pressure in the right iliac region. The pain had come on two days previously, being ushered in by a sharp attack of diarrhoea, caused by eating unripe fruit. Temperature 101° , pulse 120. I gave a hypodermic injection of morphine and atropine and waited for its effect before making farther investigation.

The muscles of the abdomen in the cæcal region were very tense, presenting the appearance and conveying the sensation of being gathered into a hard lump. This condition, I concluded, was the result of nature's effort to protect an underlying tender and swollen appendix.

I ordered the patient to bed, gave a dose of sulphate of magnesia, and applied hot compresses. Next morning the bowels had moved and he felt much better; wanted to get up and go about. Temperature 100°, pulse 110. In the evening temperature and pulse a little higher. Thus it varied; morning remissions, evening exacerbations, till the 19th when I found him quite comfortable. Temperature and pulse normal, not much tenderness over the appendix.

On the morning of the 20th, I saw that a change had taken place—an anxious expression, ashy color, finger tips, nose and ears cold, right leg drawn up; temperature 103°, pulse 180. These were the pathognomonic signs of perforation. I immediately notified the patient's relatives that if his life was to be saved the hour had come for operative interference.

Drs. Bazemore and Fitzsimmons, of this city, were called who concurred in the diagnosis and the necessity of prompt action.

Utilizing a kitchen table covered with oil cloth, we soon had an operation table, the patient walking to it himself and being assisted upon it. The abdominal wall and pubis were carefully shaved and cleansed, and an incision five inches long made over the appendix, the successive layers being divided on a grooved director. On opening into the peritoneal cavity about one ounce of thick pus escaped from a circumscribed abscess, which was sponged out to prevent contact with healthy membrane. The peritoneum in the right iliac region was thickened and opaque, a number of inflammatory adhesions and bands having formed which were separated and broken down by the hands.

Following down the longitudinal band on the cæcum, the appendix came into view, attached throughout its whole length to the intestine. On separating the two structures the end of the appendix was found. Gangrenous perforation had taken place, and a foecal concretion the size of a hazel nut had sloughed through into the peritoneal cavity. The appendix was then ligatured with silk about one-quarter inch from its junction with the intestine and amputated at about the same distance below the ligation.

Two large pieces of thickened necrotic omentum were removed by ligaturing the sound tissue beyond with catgut and snipping through it with a scissors.

After thorough irrigation of the peritoneal cavity with sterilized water and drying with antiseptic sponges, the wound was closed by two rows of sutures, deep silk and superficial catgut. A drainage tube was inserted into the lower part; iodoform and bichloride gauze completed the dressing which was

not removed till the third day, when the wound was flushed out with perchloride solution 1-4,000.

This treatment was continued for a week when the tube was withdrawn. The upper part of the wound healed by first intention, the lower by granulation, the edges being held together by a plaster corset.

For two reasons this case is interesting: 1st. The symptoms lasted ten days before perforation took place. 2d. The patient had mitral regurgitation.

The articles by Professor Wyeth and Dr. Simon Baruch, in the July number of *INTERNATIONAL JOURNAL OF SURGERY*, should be in the hands of all practitioners who may ever be called on to operate for appendicitis.

GALL BLADDER OPERATIONS—SIX CONSECUTIVE CASES OF EXTRA-UTERINE PREGNANCY.*

BY RUFUS B. HALL, M.D., Cincinnati, O.

The author reported seven cases of gall-bladder operations that he had made, in three of which the common duct was obstructed from three to seven and nine weeks respectively. The case with obstruction for three weeks recovered from the operation. The case with obstruction for seven weeks had gall stones for eight years before operation, and at the time of the operation had a stone impacted in the common duct, and malignant disease at the head of the pancreas and obstructing the common duct. The case with obstruction for nine weeks had a stone so perfectly impacted that the common duct had to be incised for its removal. The three cases were in extremis at the time of operation, from the long continued cholæmia. The cases with obstruction for seven and nine weeks, died from exhaustion on the third and sixth days after the operation. The remaining cases in which the cystic duct was obstructed recovered, making five recoveries and two deaths. With the light of his experience the author would hesitate to advise an operation in cases where there had been complete obstruction of the common duct for seven to nine weeks. The power of recuperation in such profound and continued cholæmia is so feeble that we can hardly hope for other than a fatal termination. The author of the paper was strongly inclined to the opinion that there is a causative relation between gall stones and malignant disease in and about the gall ducts and head of the pancreas. He thought that the long years of continued irritation from the presence of gall stones and the

* Abstracts of two papers read before the American Association of Obstetricians and Gynæcologists, at St. Louis, Mo., Sept. 20, 21 and 22, 1892.

consequent repeated attacks of hepatitis favor the development of malignant disease in and about the gall ducts. He urged early exploration in obscure hepatic disease of a number of years standing, even if a positive diagnosis of gall stones cannot be made, and cited a case in which he removed 91 gall stones under similar circumstances. In this case the patient had pains in the region of the gall bladder and liver, but no other signs of gall stones. If early operation was made, there would not be so many cases of obstruction of the common duct with the high mortality following that complication. If all of the cases operated upon where the common duct was obstructed could be tabulated, the mortality would probably be very great. On the other hand, in cases where the common duct is not obstructed the mortality of the operation is very small. These facts should be sufficient to warrant early exploration.

In his other paper the author said he would try to illustrate and emphasize a few facts in connection with the subject of extra-uterine pregnancy, which are of great practical importance to the general practitioner and the specialist alike. He illustrated from clinical facts the difficulty attending a correct diagnosis as to intra and extra-peritoneal rupture of the sac in extra-uterine pregnancy in the early months of gestation, and the danger to the patient in attempting the same, thus encouraging delay in making the necessary operation in those cases where the rupture has occurred. In the six cases reported as the basis of his paper five had ruptured before the operation was made. In all the ruptures had occurred from three to five weeks before the operation, and in every instance the sac showed conclusively that the rupture was free into the peritoneal cavity from the first, and not into the folds of the broad ligament. The author dwelt upon the fact that in two of the cases, the first and the fourth in the series, the blood clot had become so firm by the absorption of the fluid portion of the blood, and from the adhesions of intestines and omentum above, as to depress the pelvic floor, making it appear from the physical examination that the haemorrhage was really in the folds of the broad ligament. That all recovered, when we consider the clinical history in the individual cases, must be considered in the nature of a happy surprise. The lesson conveyed in the report of the cases is that there are no certain means of knowing, before the operation, whether or not the rupture has taken place into the peritoneal cavity or the broad ligament, especially is this true if the rupture occurs in the first few weeks of gestation. Therefore, if we treat all cases of rupture as if they were really ruptures into the peritoneal cavity, it would be the correct practice. The author of the paper believed if a case

comes under observation before the fourth month of gestation, it is the duty of the physician not to wait until he is certain that rupture has taken place into the peritoneal cavity before advising an operation, but to give the patient the best chance for her life; and that is an abdominal section, without delay.

THE HEALING OF WOUNDS BY FIRST INTENTION THROUGH THE USE OF SALICYLATE OF SODIUM.

BY J. T. HALL, M.D., Chicago, Ill.

The annals of surgery show a large decrease in the mortality through the modern scientific management of surgical operations, but there certainly is a large field for further investigations; the idea of antiseptic surgery is a correct one, but the application of so-called antiseptics is far from being based on true scientific principles.

An antiseptic that has caustic and poisonous properties, one that not only destroys bacteria, but is capable of poisoning the whole system by absorption, is not a true antiseptic according to nature's laws of repair, but a so-called mechanical antiseptic. A true antiseptic, when applied to the wounded surface, should stimulate and assist repair by preventing all decomposition, and at the same time destroying all external poisons that would inoculate the wounded tissues.

I had often thought while dressing wounds that if I could find a dressing that would heal wounds by first intention, where repair by granulation was not needed, what a grand thing it would be in preventing scars and preserving the normal condition of wounded parts. But this I failed to do until the old maxim "that necessity is the mother of invention," proved true, and brought about a treatment which has enabled me to heal all wounds by first intention when so desired. While practicing in a small town I was called to the country to see a patient, and on the road met a man on his way to town after a physician to attend a neighbor who had been hurt by a heavy beam falling on him. I went with him and found a man about forty years of age, who had been hurt by the sharp edge of a large beam striking him on the head, making a large and deep scalp wound. When I looked for my pocket-case of instruments, I found that I had forgotten to put them in my pocket. So I took a pair of scissors and a razor and shaved off the hair from the wound, and with a common sewing needle with cotton thread, as no silk was to be obtained, sewed up the wound which required a number of stitches.

The patient drank more or less all the time and was under the influence of liquor when I saw

him. My first thought was to guard against erysipelas. When I opened my case to get something to dress the wound with, I found that I had nothing with me that would answer except a small quantity of salicylic acid, which I first thought to sprinkle on the wound dry as I had often done, but found that I had not enough to cover the wounded surface, so I asked for a glass of water and some baking soda. I dissolved the acid with the soda and then added water enough to make about a twenty per cent. solution, then taking a piece of muslin of three or four thicknesses, I saturated it with the liquid and applied it to the wound, directing them to renew the application every two or three hours, or often enough to keep the wound moist until my return the next day.

Great was my surprise, at my visit the next afternoon, to find but little inflammation, the edges of the wound already beginning to contract together, presenting every appearance of healing by first intention.

To make amends for my carelessness in being caught with my medicine case so empty, I had gone well supplied with dressings, intending to use whichever I deemed best, but concluded to let well enough alone, directing them to continue the treatment until I removed the stitches, which was done on the fourth day. I found the wound already closed, without a particle of pus, not even around the stitch openings. In fact I had never seen a wound heal so nicely in so short a time.

It has now been over twelve years since my experience and I have as yet to see the first case that did not heal by first intention where it was properly used. I have also used it in minor surgery, both as a dressing and antiseptic, with the most gratifying results, and have come to regard it as the only true antiseptic dressing that I have ever used. While it is true that corrosive sublimate is a valuable antiseptic, it possesses poisonous properties which render its use most dangerous in many cases. The healing of wounds by first intention through the use of salicylate of sodium, prevents scars and often deformities from suppuration.

I remember one case among many, where a boy received an injury to his eye by a piece of glass cutting through the lid dividing the cornea, about one-sixteenth of an inch. I not only healed the cut in the lid by first intention preventing ptosis, but prevented suppuration of the cornea, leaving the eye in good condition. I use from ten grains to two drams, each, of pure salicylic acid and bicarbonate of sodium to the ounce of water, reducing the strength as the wound heals, always applying it either with gauze or three or four thicknesses of muslin, and keeping the wound moist with the solution until

closed. I found with this as with other dressings, that they should not be used with cotton, as there is in the process of repair a constant waste being thrown off which should not be retarded or confined by the use of cotton.

CONVENIENT APPARATUS FOR PREPARING THE PLASTER OF PARIS BANDAGE.

BY M. G. McNIVEN, M.D., Marysville, Mont.

As the plaster of Paris dressing is so extensively used, and as the present means for preparing the bandages in small quantities are so unsatisfactory, I have devised an apparatus to facilitate their preparation, which has proven a valuable aid.

It consists of a box, made either of tin or of wood lined with tin. I prefer the latter, as it is more durable. The inside dimensions are: length, 7 inches, width, 5 inches, height, 5 inches. Its mechanism is very simple, and will be readily understood from the accompanying cuts.

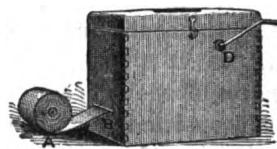


Fig. 1.

Through one end of the box, about three-quarters of an inch from the bottom, is a horizontal slot (*b*) 4 inches in width, which slopes downward, to prevent any egress of plaster. The bandage (*a*) passes through this and under a smooth stationary wooden pin (*c*) about a half inch in diameter, thence up to the reel (*d*) at the top, where it is wound.

To operate, first put a bandage in place as directed above, fill the box with plaster to within an inch of the top, wind the bandage up until only two or three inches remain outside of the slot. To the under side of this free end the next bandage is secured, by means of a flat pin, and is then pulled through by a few turns of the crank. When the pin reaches the reel, it is taken out, the bandage already wound being removed, the second made fast to the reel, and so on.

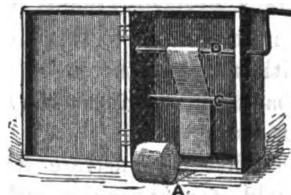


Fig. 2.

If a piece of bandage be always left extending from the slot to the reel, this will dispense with the primary

threading when next used, and also the removal of any plaster from the box. When through using, close the lid, and the remaining plaster will keep dry until wanted again.

By these means the bandages receive a uniform coating of plaster, which is well pressed into the meshes. The efficacy and rapidity of this method, together with its cleanliness, will be much appreciated especially by those who have many bandages to prepare.

RELATIONS OF PELVIC DISEASE TO PSYCHOICAL DISTURBANCES.*

BY GEO. H. ROHE, M. D., Catonsville, Md.

The author pointed out the frequency with which bodily conditions influenced mental states. Thus a torpid condition of the intestines, Bright's disease, putrefactive processes in the intestinal canal, etc., might give rise to melancholia and other disorders of the mental functions. It is not irrational to suppose likewise that diseases of the female sexual apparatus would have a not inconsiderable influence in the production or perpetuation of mental disorders. As a contribution to the knowledge of the subject the following report was submitted:

In a hospital containing 200 insane women, 35 were subjected to vaginal examination and 26 found with evidences of pelvic diseases. In 18 of these the uterine appendages were removed with the following results:

Sixteen recovered from the operation and two died. Of the sixteen recovered, three have been discharged from the hospital completely restored, both physically and mentally. In 10 considerable improvement followed the operation in both physical and mental conditions, and in three the operation was of too recent a date to allow any definite expression of opinion.

The mental disorder present in the 18 cases was melancholia in six cases, simple mania in one, puerperal mania in four, hysterical mania in one, periodic mania in two, hystero-epilepsy with mania in one, and epilepsy with mania in three.

The author, basing his opinion upon his experience, concluded as follows:

The facts recorded demonstrate first, that there is a fruitful field for gynecological work among insane women; second, that this work is as practicable and can be pursued with as much success in an

insane hospital as elsewhere; and third, that the results obtained not only encourage us to continue in the work, but require us, in the name of science and humanity, to give to an insane woman the same chance of relief from disease of the ovaries and uterus that a sane woman has.

ARTERIAL THROMBOSIS; ACUTE GANGRENE OF RIGHT FOOT AND LOWER THIRD OF LEG; AMPUTATION; COMPLETE RECOVERY.

BY FRANK L. R. TETAMORE, M. D., Brooklyn.

I was called on a Sunday night, four months ago, to see a case of acute gangrene, by Dr. Herman, of Brooklyn. I found a young woman about twenty-four years of age, temperature 103°, pulse rapid and feeble. The gangrene extended to the middle third of the leg.

She had been confined six weeks previously. Her pregnancy had, I should judge, been about normal. Three or four days after delivery she developed elevation of temperature with peritonitis and septicæmia. The swelling of both limbs commenced about the third week, and had been in this condition up to the time I first saw the case—six weeks after delivery, as already stated. I amputated at the junction of upper and middle third, doing a flap operation. Chloroform was used as anaesthetic; hot water and bichloride as antiseptics. A large clot, about one and one-half inches long, was found protruding from the artery, and was drawn out. The dressing consisted of iodoform and vaseline with borated cotton. The wound healed entirely in sixteen days, and the patient made a perfect recovery in six weeks.

EXTRA-UTERINE PREGNANCY.*

BY EDWIN RICKERS, M. D., Cincinnati, O.

The simplest classification is the following by Heywood Smith: 1st. Pre-ruptured stage. 2d. Ruptured stage. 3d. Post-ruptured stage.

Primary rupture is in the majority of cases tubal.

Positive diagnosis of extra-uterine pregnancy in the pre-ruptured stage is rarely possible.

Rupture after the third month is more disastrous than previous to that time.

The author operated successfully during the eighth week—the earliest operation he had ever seen performed.

*Abstract of a paper read before the American Association of Obstetricians and Gynaecologists, St. Louis, Mo., Sept. 20-23, 1892.

*Abstract of a paper read before the American Association of Obstetricians and Gynaecologists, at St. Louis, Mo., Sept. 23, 1892.

More than the majority of cases rupture into the peritoneal cavity; these are more serious than those that rupture into the broad ligament.

The author also reported a case where the foetus died at the sixth month and the bony skeleton was delivered per rectum; the patient was confined to bed for two years, but recovered. An early abdominal section in this case could not have been more serious.

If operators and expert diagnosticians cannot make a diagnosis in the pre-ruptured stage, how can so-called electricians pronounce cures in pre-ruptured stage by electrolysis?

We cannot hope to do good in the stage of rupture with electrolysis.

The great majority of cases (some claim that all) of intra-peritoneal rupture die without operation.

Treatment comprises operation, with clean knife, clean hands, clean water and clean ligatures, and should be resorted to as early as possible.

Phantom Tumors of the Abdomen.—In a very interesting collection of lectures published by Dr. Thiriar, of Brussels, the author devotes one to the discussion of the error, often committed even by the best surgeons, of diagnosing a tumor in the abdomen which does not actually exist. Not unfrequently palpation has elicited the sensation of a round tumor, uniform and resisting to pressure, similar to the feeling imparted by the presence of a cyst or advanced pregnancy. Besides the patient presents evident symptoms of nervous disorder.

Complete anaesthesia brings complete resolution, the abdomen collapses rapidly and the tumor disappears to reappear as soon as the effect of chloroform vanishes. M. Thiriar relates that one day the sight of a bistouri sufficed to make such a tumor disappear permanently.

The origin of these false tumors cannot be easily explained; they may be due to a high degree of tympanites, also to a localized contracture of the abdominal muscles. This contracture may be voluntary or involuntary; in the latter case it is often of a reflex and secondary nature.

From these facts, M. Thiriar concludes that, even when all the signs of an ovarian cyst exist, it is wise to ask one's self whether there is really an abdominal tumor. If doubt exists, the patient should be anesthetized. Yet it must be borne in mind that there may be a tumor, the symptoms of which have been magnified by nervous muscular contractures. Exploration of the bladder may be also necessary to establish a diagnosis.—*Journal de Medicine et de Chirurgie pratique.*

Clinical Department.

LYMPHANGITIS—LIPOMA.

BY ARPAD G. GERSTER, M.D.

Visiting Surgeon to Mt. Sinai and the German Hospital, etc.

The first patient I show you is a child, four years of age, rather anaemic in appearance, who has a fistula in the region of the lachrymal sac, which was apparently incised. We also learn that this child has been suffering from an otitis media. In front of the tragus you will notice a well defined swelling, rather diffuse in character, which does not on pressure give signs of fluctuation.

As you know, there is quite a collection of lymphatic glands in front of the ear, and these occasionally go on to suppuration, giving rise to a condition known as suppurative lymphangitis. On superficial examination you would think this child was suffering from the mumps, but in mumps the mass of the swelling is located back and underneath the angle of the jaw, while here the mass of the swelling is in front of the ramus of the inferior maxilla.

Now the question arises: What can be done for this case? In all glandular trouble the first thing to consider is the cause. We know that glands very rarely are the original and primary seat of the trouble. That they occasionally are we do not deny, but as a rule, you may accept the statement as a good and sound one, that whenever you find glandular swelling always look for something in the vicinity as the primary cause. Mistakes are made occasionally, and serious ones too, one of which I shall mention that came under my observation. The patient was a man, who was sent to me with a swelling of the submaxillary glands by his family physician. His general health was deteriorating and he wished to have the tumor removed, as a diagnosis of cancer had been made. When I heard the man talk I made up my mind at once that this tumor was not the primary cancer. I learned from him that he had been hoarse for a year and a half, and on looking into the man's larynx I found a laryngeal cancer, of which the doctor, who had been observing him for a year and a half, had not the remotest idea. I mention this incident simply to warn you against making such mistakes, for by early recognition of this man's trouble his life might have been prolonged. Furthermore, the patient was deeply disappointed when I told him that I was not going to touch the tumor, as its removal would be of no practical benefit to him. Mistakes like this are disagreeable to all concerned, and they should be avoided whenever possible.

Therefore, in the case of this child, I have examined the mouth, eyes, nose and face, to see if there was any cause for this glandular enlargement. Having found the cause of this trouble, your line of treatment should be directed against the causative lesion. If otitis media produces the inflammation in this instance, the rational plan is to attack the otitis media and cure it. In early cases when the glands are not destroyed by prolonged suppuration, removal of the primary trouble alone will be sufficient to do away with the glandular affection. Suppose a man has injured his hand and is suffering from a small poisoned wound which is suppurating. You examine his arm and find red streaks of lymphangitis extending into the elbow and axilla. On feeling in the axilla you find there two or three hard lumps of lymphatic glands which are threatened with suppuration on account of the absorption of poison from this little wound. The proper thing to do would be to treat the cause of this trouble—bring about improvement in the condition of the poisoned wound in the hand.

If there is pus there which cannot find a vent, take a knife, incise the abscess, pack it and treat it by the open plan. The moment the poisonous material is evacuated—the intense tension relieved—the streaks of lymphatics will disappear and the glandular swelling in the arm will be cured.

This is an illustration of what all of you have observed at one time or another. There are cases, to be sure, in which the causal indication may be fulfilled and yet these secondary troubles will not disappear. Where actual suppuration has been set up in the glands, or caseous degeneration developed, you might eliminate the cause, but the glandular trouble has progressed to such a state that the glands themselves will have to be subjected to surgical treatment before a cure is effected.

Now, to go back to the case before us, we have here an otitis media, with impending suppuration of the lymphatic glands in front of the ear, of five days' duration. This is a recent case, and by improving the condition of the middle ear by the establishment of drainage, cleanliness, etc., it is very probable that this glandular swelling and inflammation will be arrested. Should this condition still persist then the glands will have to be extirpated. Should acute suppuration set in, an incision will have to be made, and these cases of acute suppuration of the glands generally get well without any great trouble. Chronic forms of suppuration accompanying simple suppurative processes, or the combination of simple suppuration with tubercular affections, are not so easily dealt with. Something more than simple incision must be resorted to in these cases.

The next patient is a man aged thirty-two years,

who has on his right side a movable, smooth, somewhat lobulated swelling, which he has probably had a long time, but has not noticed till recently. It occupies the subcutaneous tissue, and if it were further upon the back of the patient, you would make a diagnosis without a moment's difficulty. It is in all probability a lipoma in a rather unusual locality. If you have a tumor not freely movable at the base and you get on palpation a feeling as if it were glued to the underlying parts, I would advise you to be very careful about making a diagnosis. In that case take a hypodermic needle, plunge it into the tumor, and ascertain its character.

I will tell you why I advise this precaution, and it may prove to you of some practical interest. Some twenty years ago I assisted a surgeon at an operation for the removal of a lipoma. When the patient was under ether I asked permission to examine the tumor, which was granted. I had some doubts about the diagnosis that was made, but I was so young, so inexperienced and so modest, that I dared not express them. We went ahead with the operation. The operator made a section of the tumor with his knife and pus welled up from the supposed lipoma. It was a cold abscess due to a tuberculosis of one of the ribs. Such a thing as this is apt to happen to any one who makes a careless diagnosis.

Now, with regard to the patient before us, the probability is that we have to deal with a lipoma. In order to confirm our diagnosis, we shall make a puncture with a needle, and if we withdraw no pus, then we can be almost absolutely certain that we are correct. Having satisfied ourselves of the diagnosis, we will then propose to the patient to have it removed. These tumors grow so large, if permitted to remain, as to greatly inconvenience the patient in the performance of his daily labor.

Should we, however, find pus in this tumor, we shall then know that we are dealing with a cold abscess, and the moment we know it is a cold abscess we shall look for the cause elsewhere. We shall follow up the sinus, find the place where the trouble originated, which is very probably one of the ribs, and remove the diseased portion of the bone, leaving behind a clean wound. If you have removed all the tuberculous matter that may be present, the wound will not only heal, but remain healed. Of course, this leaves no security against infection of any other part of the body by the same malady. You know tuberculosis may attack all parts of the human body, one after the other, and, of course, we have no control over that.

Since we are on the subject of lipoma, I may be permitted to make a few remarks about the character of these neoplasms, which may be said to be on the

borderland of pathology. They are not in reality pathological, because the constituent parts of a lipoma are nothing but connective and fatty tissue. They are only pathological on account of the size they attain and the discomfort they cause the patient.

Lipomata occupy generally those spaces where we normally find an accumulation of fat. As far as their form is concerned, the majority of them are well defined, encapsulated growths. There is a form of lipoma which is called diffuse lipoma, which is an accumulation of healthy fat under the skin in those portions of the body in which there is normally a larger deposit of fat than elsewhere, without any capsule. When you have to deal with a lipoma like this, as soon as you have exposed the capsule you can shell it out and remove it in a few minutes on account of the encapsulation; but in a diffuse lipoma you cannot proceed in this way. You have to divide a great many more septa and you have consequently a considerable amount of trouble. You never know whether you have removed enough or too much—you must draw an arbitrary line and work within it. Diffuse lipomata, however, are not common.

ACUTE SALPINGITIS—CYSTIC DEGENERATION OF THE OVARIES—RETROVERSION OF THE UTERUS.

BY PAUL F. MUNDE, M.D.

Professor of Gynecology at the N. Y. Polyclinic, Visiting Gynecologist to Mt. Sinai Hospital, etc.

GENTLEMEN: The patient I present to you is a woman, twenty-one years of age, who has been married nine months. She menstruates every three weeks, the flow lasting for three or four days, and complains of pain on both sides, especially the left. She is constipated and has a white vaginal discharge.

As I examine this woman I find to the left of the cervix a swelling which is not very large, while the uterus is not as movable as it should be. She has evidently had an inflammation of the left ovary and tube, but how it was produced is more than I am able to say. Sometimes over indulgence in sexual intercourse, and sometimes exposure to cold will cause this condition. Cold injections to prevent conception might produce it also. When you examine a woman with pains in this region and feel nothing abnormal to account for it, there is generally some pathological condition of the appendages to account for the trouble—some congestion which you cannot make out by the sense of touch.

We will make an application of iodine to the vaginal vault and insert glycerine tampons in the vagina. I make it a rule in private practice, to examine cases of

this kind every three weeks. The patient's pain may be much improved at the end of this time though the swelling is in no way diminished.

I saw last winter an acute salpingitis and ovaritis develop in a private patient of mine after a dilatation I performed in my office for a cervical catarrh, from which she had been suffering for a number of years. She came complaining of a profuse discharge, and on making an examination I found she had endometritis and a narrow canal. I stretched the canal thoroughly and made an application of iodized phenol to the part. About a week after that she came back saying she had been confined to her bed by sickness. I examined her again and found the ovaries as large as my fist. I sent her back to bed, applied blisters and poultices, and told her to remain there for a month. At the end of that time she came to my office and I found the ovaries as large as before. I put her in bed again, reapplied a blister, and when she came to my office the next time she had entirely recovered.

These acute inflammations of the appendages will sometimes follow local applications to the uterus, the introduction of a sound or dilatation. If you use dirty instruments you will produce septic inflammation of the organs mentioned. On my instrument table I have a saturated solution of creolin and I dip the instruments into this solution before introducing them in the uterine cavity.

The next patient has a rather remarkable history. She is twenty-eight years old and has three children, the last child being still-born. During one of her confinements some years ago she was attended by a midwife who gave her some medicine that produced severe uterine contractions, the child being in the transverse position. The midwife got frightened and sent for a physician, who, when he came, found the head in the pelvic cavity and extracted it by the forceps. The doctor put his hand into the vagina after delivery of the child and the hand entered the abdominal cavity, the external os being firmly closed. Twelve hours later I was called to see the patient and on examination found an enormous rent in the posterior vaginal wall through which my hand readily entered the abdominal cavity. The case was, of course, very unfavorable as to prognosis. I introduced iodoform gauze into the vagina and placed a drainage tube in the peritoneal cavity through the rent in the vaginal wall. I thought I would sew up the tear the next day, but when I again called the temperature was 104° F. and the pulse quick and small, and so I did nothing. I kept the drain in a few days longer and an offensive discharge flowed out. The vagina was irrigated gently and the bowels moved by Rochelle salts. The rent in the vagina finally closed up spontaneously. I have seen a dozen

such cases of tear of the vaginal vault, the child having escaped into the peritoneal cavity, and they all died. The point about the treatment of the case I wish to impress upon you is not to do too much.

The next patient is thirty-four years of age and has been married fourteen years. She has no children and her menstruation is scanty in amount. She has pain in the back, on both sides of the abdomen, especially the left, and has a profuse white discharge.

This is a rather interesting picture the patient presents. There are two conditions here that are radically wrong. This woman's uterus is two inches in length and the vagina is quite shallow. One of the ovaries has undergone cystic degeneration, and the uterus has become atrophied. Of course, it is too soon for the menopause to be brought about in this case, and therefore, such an atrophy as this is premature and pathological.

We have had this woman under observation for some time to see if it was worth our while to subject her to the risk of an operation, but as she does not complain of much pain I think it proper to aspirate by the vagina and take chances of effecting a cure. I have aspirated a number of cases of hydro-salpynx, drawn the fluid out, and that was the end of trouble. This case might be one of hydro-salpynx.

Before doing a laparotomy for cystic degeneration of the ovaries, it is my custom to withdraw some of the contents of the cyst under due antiseptic precautions, and subject it to a careful examination. You may find pus, blood or ovarian fluid, and it is a great relief to one's mind to know what is present before you open the abdominal cavity.

The next patient is twenty-seven years of age, and has two children, the last one being born three years ago. She flows every four weeks and the flow lasts three days. She has pain in the back, on the left side of the abdomen, and headache.

This is one of a class of patients one frequently sees at clinics of this kind, and she presents a combination of two conditions which are not at all dangerous, but at the same time productive of a very great amount of discomfort. This woman complains of pain in the lower part of the back and headache. Probably the headache is due to neurasthenia, but the backache and pain in the left side are due to an entirely different cause.

On making an examination of this patient, I find the os is tipped forward and the body of the uterus pushed down. The pain on the left side is due to pressure of the retroverted uterus on the ovary, increasing its sensitiveness to a very great degree. To relieve this condition we will place this woman in Sims' position, lift up the uterus and introduce a pessary. After this has been done, she will experience relief from the pain.

STRICTURE OF THE URETHRA.

BY JOHN A. WYETH, M.D.

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The patient was a male, aged thirty-two, who presented for the treatment of a stricture of the membranous urethra. It was a stricture of such small calibre, that a urethrotome could not be passed through the constriction, and it was necessary to dilate it to a sufficient size.

In performing the operation of internal urethrotomy, the operator said that a sufficient degree of anaesthesia can be induced by the use of cocaine injected into the urethra. In urethral surgery he always washed out the canal with Thiersch's solution and then injected a solution of cocaine—generally a four per cent. and about half a dram of this. In five minutes local anaesthesia will be induced. A filiform bougie was then passed along the canal until the strictured part was reached, and in passing it through this the greatest difficulty was encountered. The instrument was then withdrawn, and Banks' dilating hard rubber filiform bougie was carried through the constriction and into the bladder. Sufficient dilatation was thus obtained for the entrance of Otis urethrotome with which the stricture was finally cut.

The hemorrhage after urethrotomy, the operator said, can be very readily arrested by turning the penis upon the abdomen, placing a pad of cotton under and over the organ, and compressing the walls of the canal by means of a spica bandage placed around the pelvis.

Not infrequently within twenty-four hours after the performance of a urethrotomy or the introduction of a sound or other instrument into the urethra, the patient is seized with rigors or a pronounced chill, followed by a rise in temperature. When the thermometer shows 100° F., it is a good plan to administer ten to twenty grain doses of antipyrine and repeat this every hour till the temperature falls to normal. If the pulse is correspondingly increased, the tincture of aconite root should be given at the same time.

After the performance of a urethrotomy, the repeated introduction of steel sounds or gum bougies is essential to its successful treatment. Dilatation should be commenced on the second or third day after the operation, in case no febrile symptoms manifest themselves. Cocaine, as a rule, should be employed at this time; for the introduction of a sound is generally more painful after an operation than the incision has been. It is well to commence with a No. 17 and increase this to 19, 20 and 21, according to circumstances. The dilatation should be repeated every second or third day for a period of three weeks, and then every fourth or fifth day for the same period; and then twice a month for three or four months.

Many strictures that have been treated by internal

urethrotomy do not recur, but a certain proportion is apt to do so, no matter how thoroughly divided and carefully treated they may be. It may thus become necessary to employ dilatation every two or three months during the lifetime of the patient. There is a certain proportion of cases, as the one brought before the class illustrated, where the stricture is so tight that a urethrotome cannot be passed through, and where it is necessary to dilate the constriction. Immediate dilatation by means of Banks' dilating filiform bougie, the lecturer considered the most satisfactory procedure.

SARCOMA OF THE PROSTATE GLAND.

BY DR. A. BARTH.

Sarcoma of the prostate gland is not a very rare affection, as was formerly thought. Although in recent times cases have been reported in which the sarcoma developed in advanced life, it usually occurs during youth and is especially frequent during childhood. At least one-half of all observations refer to children from one to eight years old. Perhaps the structure of the gland during early life, when the connective and muscular tissues predominate, plays an important part in this connection.

Barth has observed three cases of sarcoma of the prostate, one in a child aged nine months. The disease in childhood is characterized especially by its destructive character. The growth penetrates in various directions the neighboring structures, appearing as a tumor above the symphysis or in the urethra or perineum. The latter mode of extension is especially common. The diagnosis is not difficult. When the patients usually come under observation dysuria or retention of urine, pains in the perineum or pelvis, and marked constipation are present, or a tumor visible externally may exist. By the use of the catheter and cystoscope, conjoint with palpation, or if necessary exploratory puncture, the diagnosis can be positively established. Owing to the soft consistency of the growth which is always present and the deceptive feeling of fluctuation conveyed on palpation, the mistake may be made of confounding it with a tuberculous process. The course is variable. As a rule the disease is more rapidly fatal in children than adults, although at the time when it is observed in the latter it is usually far advanced. The general health of the patients is not much affected so long as the evacuation of urine and feces is not interfered with. Cachexia and exhaustion do not supervene until the development of purulent cystitis or the breaking down of the tumor.

Operative procedures in sarcoma of the prostate give the same unfavorable prognosis as in cancer of this organ. The most that can be hoped for is a palliative effect.—*Archiv f. Klin. Chirurgie*, Bd. 42, Heft 4.

Abstracts and Selections.

THE TREATMENT OF URETHRAL FISTULA.

BY DR. F. KAMMERER, New York.

The author has twice had the misfortune of wounding the right ureter in difficult abdominal operations, with the result in each case, of establishing a uretero-abdominal fistula. At a later period a complete cure was effected by nephrectomy.

In the first case the accident occurred during laparotomy, undertaken for a double pyosalpinx on the right side, owing to the presence of numerous firm adhesions. The abdominal wound was closed at the end of forty-eight hours, and the patient seemed on the road to recovery, but on the seventeenth day she developed symptoms of intestinal obstruction. Careful dissection at the lower end of the abdominal cicatrix, showed no intestine adherent at this point, but the area of dullness was found to correspond to a part of the abdominal cavity, shut off by adhesions, from which a large quantity of sero-purulent fluid escaped, having a distinctly urinous odor. An abdominal urinary fistula persisted, which by cystoscopic examination and other tests was demonstrated to be ureteral and not vesical. Subsequently the patient developed a large abscess in the lumbar region, which was opened by a lumbar incision and the kidney removed. Complete recovery ensued, the remaining kidney fully assuming the functions of the one removed.

In the second case the ureter was wounded during a supravaginal hysterectomy for a large fibroid on the right side, the tumor being enucleated with great difficulty on account of extensive adhesions to the bladder, intestines and pelvic wall. The abdominal incision was closed, the broad stump being held in place by two transfixion needles. On the third day the patient presented symptoms of well-marked peritonitis and septic poisoning, and as a last resort the abdomen was reopened above the stump. No fresh adhesions were found, but a considerable quantity of more serous than purulent fluid escaped from the general peritoneal cavity. The intestines were held up and a large tampon was introduced into Douglas' *cul-de-sac*. After the operation the septic condition subsided, and during the following two weeks the patient progressed favorably. The tampon was removed from the peritoneal cavity and its tract was rapidly closing. The large sloughing stump was still lying in the wound, but owing to removal of the transfixion needles, had retracted considerably into the peritoneal cavity. On this account the cutting

of the elastic ligature was not easily accomplished; but when the latter was withdrawn from beneath the stump, a steady flow of urine almost immediately began from the abdominal fistula. When the stump finally came away it left a conical opening which slowly filled with urine. When continuous and moderate pressure was exerted on the right kidney the flow from the kidney very markedly increased. After several days however, it became suddenly arrested and urine began to escape involuntarily from the vagina. This condition existed for the following month, the fistula at times emptying into the wound and at times into the vagina. Injection of the bladder showed that viscus to be intact, evidenced also, by the clear urine from the bladder, in contrast to the turbid urine from the vagina and abdominal fistula. After ceasing for a time the abnormal flow recommenced, and as the patient's condition seemed less favorable, nephrectomy was performed four months after the first operation. Within two months complete healing had taken place, and a little later the abdominal fistula also closed spontaneously. The secretion of urine is now normal in quantity and quality.

The author uses these cases as a text for the following interesting remarks:

In the first of the cases the ureter was, no doubt, caught in a ligature *en masse* and divided, whereas in the second case it was probably only partially included in the elastic ligature securing the stump of the uterus. Many points seem to suggest this explanation. Very great traction had to be exerted on the large tumor to allow at all of the application of the ligature; and probably the ureter was thus drawn up within reach of the latter. Furthermore, the leakage only became manifest when the elastic ligature was withdrawn, and then the frequent and prolonged complete arrest of the flow of urine from the fistula, in connection with the fact that simultaneously normal quantities of urine were secreted from the urethra, can only be explained on the assumption of a lateral opening. Why this should have occasionally closed, allowing the urine to flow into the bladder, I cannot say. That such was the case is evident, for the normal quantity of urine passed on these occasions by the patient, could not have been referred to the sound kidney alone. No compensatory hypertrophy had yet taken place, otherwise the normal amount of urine should have been passed at an earlier period, following nephrectomy. This, however, was only the case three weeks after operation.

In reviewing the literature of the last years, I have found eleven cases of nephrectomy for ureteral fistula. These include six of the abdominal variety (Simon, Lefort, Bertini, Thornton, Billroth and Pozzi) and

five of the vaginal or uterine (Crede, Zweifel Gusserow, Van der Weerdt, and Boeckel). Two other cases of abdominal fistula have been reported by Muller and Hegar, in which nephrectomy was not done. In all of the abdominal fistulae, excepting Lefort's case, the aetiological factor was an injury to the ureters during difficult abdominal operations. In Lefort's case the fistula developed as the result of a stab-wound in the right lumbar region. Of eleven cases in which a communication existed with the vagina or uterus, seven were due to traumatism during parturition (Nicoladoni, Kehrer, Crede, Van der Weerdt, Schede two cases, and Zweifel) and four (Kaltenbach, two cases, Boeckel, and Gusserow) developed after vaginal hysterectomy. Although I have not made a very thorough search for cases of the latter kind, it hardly seems possible that an operation so frequently done as vaginal hysterectomy should be so rarely associated with injury to the ureters when the proximity of the latter to the cervix uteri (an inch) is recalled. Gusserow tells us that this accident has happened to most operators who have frequently done vaginal hysterectomy, but I have not found any authority for this assertion, although the same statement from other operators is familiar to me. Adding to the eleven cases of nephrectomy for ureteral fistula my own two, we have thirteen cases, with two deaths (Billroth and Lefort). In one of them death occurred on the eleventh day after operation (Billroth) from insufficiency of the remaining kidney, in a patient who was operated upon many months after the original injury, and had been subjected to a good deal of catheterization of both ureters without any permanent result. She was withal in a very bad general condition for the operation. The other case was also one of seven months' standing before nephrectomy was resorted to (Lefort). The patient died on the second day after operation, and an abscess was found at the site of the removed kidney. I do not think that these two cases will weigh heavily in estimating the dangers of nephrectomy for fistula. They were done eight and twelve years ago, when the technique of the operation was not so well established and anti-septic surgery not as yet so universally accepted. I do not expect that the assertion that extirpation of the *normal* kidney is a sure and safe operation, unattended by many risks, will meet with any serious opposition among surgeons. On the other hand, it cannot be denied that inflammatory thickening and adhesion of the capsule to the kidney make the enucleation of the latter a much more difficult operation. This was the case in Lefort's patient, and the same impression I certainly gained from my two cases. In my second case there was present well-marked pyelitis, and several purulent foci were

found in the substance of the kidney; inflammation had spread to the peri-renal tissue, and the operation was not accomplished so readily as in the first case. We can conclude, then, that nephrectomy, when undertaken at not too distant a period after the primary injury to the ureter, is a very safe surgical procedure, provided the remaining kidney is in a healthy condition, and it can be accepted that no evil results will later on follow from the removal of the organ, when the compensatory function of the remaining kidney is well established. The first of these conditions must, of course, be decided in each individual case; the latter, I think, we must grant, in view of experimental and clinical evidence. In deciding about the condition of the kidney with intact ureter, we are more fortunately placed in these cases than in cases of renal disease. With the aid of the cystoscope we shall generally be able to determine that no urine reaches the bladder from the injured ureter, and then the problem is readily solved by examination of the urine passed by the urethra. It is well to bear in mind in this connection that a kidney secreting turbid urine may be able to do the work of secretion for the economy, while another kidney secreting clear urine may, after extirpation of its fellow, prove inadequate to this task. I operated in a case of tubercular kidney a year and a half ago which well illustrates this. The left kidney was removed for far-advanced tubercular disease, but the right kidney, although also slightly affected at the time of operation, has assumed the functions necessary for the maintenance of life. The urine at present contains about the same amount of leucocytes and albumin as after nephrectomy. One, or perhaps several, tubercular foci are present in the remaining kidney, communicating with the pelvis; but other parts of the renal tissue were not affected and were capable of compensatory hypertrophy, whereas in diffuse lesions of the kidney no hypertrophy is possible. I do not think that this point, first insisted on by Tuffier, has receive the general consideration it merits.

The repair of vaginal and uterine fistula has been attempted with varying success. In these cases the vesical end of the ureter after a lapse of time is generally found occluded, or at least impervious to catheters introduced from the bladder or vagina. For this reason a large vesico-vaginal fistula has generally been established as the first act of a plastic operation for the relief of these cases. Following this, the two openings have either been put in communication with one another by converting part of the vaginal vault into a channel, or by secondary colpokleisis, partial or complete. In many of these cases, however, the operation has not been attended by success, or only

after many attempts, and in some nephrectomy had to follow as an ultimate measure of relief. Thus Zweifel attempted three plastic operations, which were unsuccessful, and finally, after the patient's husband objected to colpokleisis, successfully performed nephrectomy. Kehrer was successful, but left a vagina only two inches long. Gusserow observed contraction of the vesico-vaginal fistula, which he had established, and on this account, later on, rupture of the originally successful colpokleisis. After enlarging the vesico-vaginal opening, colpokleisis was a second time resorted to. A year later the patient returned to the hospital with formation of phosphatic concretions in the pouch above the obliteration, necessitating a reopening of the latter. In one of Kaltenbach's cases a similar mishap occurred after partial colpokleisis, but a fourth operation was not done, as a recurrence of cancer had in the meantime appeared. Schede observed severe symptoms from stenosis at the site of the fistula after successful plastic closure, and was obliged to catheterize the ureter for a long time. Compare with this the five cases of nephrectomy for uretero-vaginal or uterine fistula, which all recovered and did well. One died six months later from recurrent cancer after vaginal hysterectomy, and has, therefore, no bearing on the question under consideration.

For abdominal fistula I do not believe any other procedures than nephrectomy have been seriously entertained. There are only the two cases of Hegar and Muller, previously referred to, in which attempts seem to have been made of closing the fistula. Muller cut into the bladder, making a communication between it and the funnel-shaped sinus, and then attempted to close the fistulous opening, but it did not entirely succeed. Hegar reunited the ureter with the bladder. Everything seems to have gone well, and although the external wound did not primarily close, it afterward completely cicatrized. These cases were reported in 1879, and I very much regret that the only reference to them I can find is very incomplete and about embodies what I have said. It is difficult to understand how a channel lined with granulations could permanently secure the uninterrupted flow of urine from the kidney to the bladder. In Hegar's case I have not been able to discover how so delicate an operation was done after a fistula had once become established. These attempts do not appear to have found any imitators. In Billroth's case Pawlik, after much torture to the patient and perhaps to himself, finally succeeded in passing a catheter through the ureter into the pelvis of the kidney, but an attempt to leave it *in situ* had to be abandoned. From what has been said, nephrectomy appears to be the only proper treatment for abdominal

and in many cases also the only one for vaginal and uterine fistula. When we recollect the many failures after plastic operations in the vagina, the inconveniences to which some of these patients were subjected, I question the wisdom of not resorting to nephrectomy in all cases of ureteral fistula. When we remove a kidney under the conditions and precautions before stated, we know that we are not robbing the system of half of its renal tissue. We know that in a short time renal tissue is reproduced, that we are not permanently throwing on one organ the work of two, but that soon one kidney, having almost the same secreting power as the original two, is in activity.

When during an abdominal operation we become aware of having wounded the ureter, what is the proper course to pursue? There are several ways of dealing with such mishaps. Immediate nephrectomy may be done or the renal end of the ureter may be transplanted to some part of the abdominal wall. Both these methods have been successfully practiced. The first would seem to be indicated in cases in which the ureter has been irreparably damaged and when the condition of the patient, who has generally passed through some serious abdominal operation, still admits of nephrectomy being performed. In both of my cases, even had I been cognizant of the injury to the ureters, the condition of the patients did not warrant any further surgical procedure. We must also remember that the increased demands upon the remaining kidney during the days following nephrectomy, while easily responded to when no complication is present, might prove too great when the patient is already struggling against the shock from a severe and prolonged laparotomy. It was this consideration mainly, coupled with the conviction that transplantation of the ureter to the abdominal wall was not quite as simple an alternative as it might seem, that led me a year or so ago to make the proposition of ligating or securing with a forceps the renal end of the ureter, and of tamponing that part of the abdominal cavity leading down to the seat of the injury. I reasoned that in a day or two the forceps could be removed or the ligature would part under pressure from the distended kidney, and the urine could then find its way along the tract of the tampon and a uretero-abdominal fistula become temporarily established. Acting on this suggestion, I have also thought that if any possibility existed of repairing the damage done to the ureter, it ought always to be attempted even if the chances of success are very small. The lumen of the ureter being unobstructed in this case, and no pressure from distention following, as when a ligature has been applied, the danger of leakage is much diminished and indeed, is not present before the tampon has effectively shut off the general peri-

toneal cavity. It may be interesting to mention in this connection that Thornton once reopened the abdomen on the day after laparotomy, suspecting some lesion to the ureter, and finding it flooded with urine, fastened the cut ureter in the loin; still no peritonitis supervened and the patient recovered entirely from nephrectomy done several months later.

In temporarily closing the renal end of the ureter, as I had suggested, are we running any additional risks for the patient? My proposal at the time was based on the lack of any unfavorable symptoms following accidental ligature in my first case, and upon the authority of no less an experimental pathologist than Cohnheim, who, after an experience of many ligatures in dogs, states that ligature of one ureter only is followed by no reduction in the quantity or change in quality of the urine secreted by the animal. In the second case I have given my reasons for assuming that the ureter was at no time completely shut off. But I have since then, in a case of sacral hysterectomy, tied the ureter and cut it intentionally and have watched for symptoms, but have observed none, excepting a very much diminished secretion of urine, the importance of which I do not wish to underestimate. Theoretically, several complications might arise from the ligature, *viz.*: uræmic intoxication, renal colic, and suppression of urine in the other kidney. Of the first of these possibilities I have no great fear. But such has been expressed to me personally by others, and in the late edition of one of our standard text-books of gynaecology I find the following statement in reference to ligature of the ureter during operations: "The patient usually died of uræmia from retention of urine in the kidney of that side, or recovered with a fistula," etc. When the ureter is firmly occluded the kidney will secrete urine and expand its own pelvis until the secreted fluid stands under a certain pressure (far less than the blood pressure) when the kidney will cease to secrete. Then absorption begins, chiefly of the watery element of the urine. Assuming that the other kidney continues in its normal function, there is no combination of secretion and reabsorption that I can imagine which could lead to a fatal issue.

Regarding the second possibility—renal colic—my personal experience is decidedly negative. In none of the cases referred to have the patients complained of pain at the site of the affected kidney, nor has later examination of the two patients that recovered elicited any statement in this direction. My clinical observations are not isolated ones. Billroth, for example, in the publication of his case, asks for an explanation of the fact that his patient suffered no such severe pain in the region of the kidney as generally

follows ligature of the ureter. Gussnerow, in his case, speaks of severe colicky pains in the region of the kidney on the second and third days after operation, but explains the lack of symptoms of renal retention in some cases, as the result of the loss of blood during the operation and the consecutive low blood-pressure—a very-acceptable theory indeed. It explains at the same time, the continuance of secretion of urine from the sound kidney, and the arrest of such secretion into the pelvis of the kidney with ligated ureter at a stage of very slight distention. I have found no other cases of ligature of the ureters in which severe symptoms of renal retention were observed, but these cases are in themselves very few. At all events, it appears evident that the patients often suffer no inconvenience from temporary occlusion of the ureter. From a study of some of Guyon's late articles relative to this subject, I am, however, convinced that under ordinary conditions, ligature of the ureter will produce the symptoms of renal retention.

The possibility of suppression of urine following ligature of the ureter seems to me to include a great element of danger. I think my case of sacral hysterectomy can lay claim to almost the value of an experiment in this direction. On the first two days the amount of urine secreted in twenty-four hours was only a few ounces. On the third day, when the ligature of the ureter gave way, twenty ounces were passed by the bladder and much urine flowed from the wound into the dressings. This is entirely in accord with what we know about impaction of a calculus in one ureter alone. Leguen has found thirty cases of anuria from this cause. The interesting case of Godlee, of suppression and uremia, which ended fatally, is well known. There is no reason why a firm constriction of the ureter by a ligature should not give rise to the same reflexes that an impacted calculus occasionally excites, leaving out of consideration, for the moment, whether such reflexes are of ureteral or renal origin. Why they should now and then be present, at other times missing, is still, I think unexplained. At all events the apparent danger of this procedure would lead me to modify somewhat my former proposal. If for any reason repair of the damaged ureter or transplantation of its renal-end were advisable, I would not risk placing a ligature on the latter, but should close it by an instrument that I could conveniently remove in case of necessity. From what I have observed, I do not believe that the latter would arise before the peritoneal cavity had been shut off by adhesions due to the simultaneous introduction of an iodoform-gauze tampon, a precaution which ought not to be omitted.

—N. Y. Med. Journ.

THE MODERN TREATMENT OF TUBERCULOSIS OF THE JOINTS.

By PROF. KÖNIG, Göttingen.

Our knowledge of chronic diseases of the joints has been considerably extended during the last twenty years, and the discovery of the tubercle bacillus was the final link in a chain of facts pointing to the tuberculous character of these affections. Our treatment has not made as rapid progress, and opinions at the present time are still much divided on this subject.

What is meant by cure in cases of bone and joint tuberculosis? In only one-fifth of all cases is the joint-tuberculosis the sole disease, and in four-fifths other diseases co-exist. The tuberculosis of the joint is a metastasis of other diseases. An actual cure could only be obtained by elimination of all disease foci.

The aim of the surgeon is to remove the local lesions. We endeavor to remove the tuberculosis radically by surgical measures, most effectually by amputation, less surely, by extirpation of the diseased joint (resection, local removal of the diseased parts plus extirpation of the capsule). Less reliable measures are removal of the diseased osseous areas from the articular ends of the bones and curettage.

In contrast to these radical local measures, we have a series of procedures which aim to remove the external functional phenomena of tuberculosis. Whether these are capable of effecting a cure is not known; with many of them the cure is not real, the disease simply being rendered latent.

What is the value of, first, the radical local cure effected by the knife; second, the removal of the symptoms by intra-articular injection, or functional physical treatment.

It is easily understood that the recognition of the tuberculous character of these affections at a time when antisepsis was gaining ground, advanced the operative treatment of joint tuberculosis to the first place, the more so since the efficacy of resection in restoring the functions of the joint was over-estimated. The outcome of these views was the so-called early resection, a resection without diagnosis, without certainty of a cure. After this exaggeration in the practice of resection came the reaction. Surgeons recollect cases of joint tuberculosis cured without operation by connective tissue contraction and by encapsulation. The means sought to bring this about were essentially physical (extension, pressure by bandages and compressors, and immobilization of the joints by plaster of Paris. By these means almost one-half of all cases of these diseases can be cured.

The author usually treats cases of coxitis in young persons in this manner. By extension he removes the contracture, then applies a plaster dressing, which is renewed, while contractures that have occurred in the meantime are rectified. This treatment is continued until the joint has become painless and useful. Joints cured in this manner are better than those which have been resected.

In some cases a cure cannot be thus brought about. These are cases characterized by severe osseous lesions, abscesses, and white fungus, and also certain cases of severe hydrops tuberculosis. Some of these patients can be cured by injection of iodoform into the joint; according to Koenig's observation, about 30 per cent. are cured. If no real improvement sets in after four or five injections, the procedure should be given up.

Among 410 cases of tuberculosis of the hip-joint observed during the last fifteen years, about one-half were treated by conservative methods—extension, plaster of Paris dressings, iodoform injections, opening of abscesses; in about 250 cases resection was performed, with a mortality of 19 per cent.

Operative procedures are indicated, first, in cases which resist the above-named measures; second, in severe forms going on to abscess formation and caseous degeneration; third, in severe osseous tuberculosis.

An important question is the diagnosis of severe processes taking place in the bones. It is probable that these result from embolism of the nutrient arteries of the bone, and hence they occur at typical places. In children their localization is especially dependent upon the development of the epiphysis.

What are the radical operations? In a certain group of cases amputation is indispensable (great extent of the disease, suppurative of the tubercular processes, co-existence of renal or hepatic disease). It is doubtless the cleanest and most certain of local radical operations, and often has an excellent effect upon the general health of the patient. Amputation, however, should only be resorted to in exceptional cases. The typical operation for these diseases of the bones and joints, is resection with extirpation of the capsule, and although the number of extirpations of the capsule has been diminished, they are still quite frequent and their results, in part, are excellent. According to the statistics of Koenig's clinic, among 100 resections of the knee-joint, performed on persons from twenty to sixty-six years of age, there were six deaths immediately after operation, six during the following months, and sixty-four cures; sixteen cases remained unimproved, and in eight amputation was performed with good result. In 1888, seventy of the cases operated upon since 1876 were heard from. Forty-four were still healthy, twenty had died of tuberculosis,

and six still had fistulae. Koenig does not advise radical operations like those of Bardenheuer-Schmidt. Unfortunately, removal of a disease focus from the end of the bone before infection of the joint has occurred is frequently not sufficient. If it is possible it constitutes a radical operation. Extirpation of the capsule alone, without removal of the end of the bone, is also an uncertain procedure.

In the discussion which followed the reading of this paper before the German Surgical Association, Dr. Bardenheuer stated that after a typical resection of the hip he always fixed the thigh for a period of fourteen days, in a position of complete abduction. He denied Koenig's statement that after resection of the acetabulum the position of the leg becomes the same as in iliac luxation. It must be determined whether there is a primary tuberculosis of the acetabulum, or primary tuberculosis of the joint with secondary involvement of the acetabulum. If, in the former case, the tuberculous focus be situated at the inner side of the acetabulum, the acetabulum must be resected. Dr. von Bergmann was favorably impressed with the iodoform-glycerine injections. It is only in cases of repeated abscess formation and fever that he gives the preference to surgical measures. The injection treatment is especially useful in tuberculosis of the knee-joint. Among 36 cases treated in 1891, 31 were cured by this method. While formerly Bergman performed from 30 to 40 resections of the hip during one year, he has since 1891, found it necessary to operate only in eleven, and this is attributable to the injection method which causes a rapid disappearance of the disease. Early resections have been discarded by him. Dr. Kuester emphasized the importance of taking under consideration the age of the patient in the selection of the form of treatment. He has been greatly pleased with the iodoform injections. Within the last few years he has resorted to resection of the hip in only three cases. Whether mechanical treatment is sufficient depends upon the age of the patient, the effect of the injections upon the pains and general health. If the injections prove useless, the patient may be treated by expectant methods until his fifteenth year; from the fifteenth to the fortieth year resection is to be considered, at a later age, amputation. Dr. Schueler believed that hip-joint tuberculosis is usually of synovial character, and that mechanical treatment has been over-rated. Dr. Koch has treated 367 cases of joint tuberculosis during ten months; in 100 the hip-joint was affected and in 167 the knee-joint. His results from operative measures were better than those from mechanical treatment. Dr. Schleich has found that fats and fatty substances, like vaseline, exert a favorable effect upon tuberculosis.

and recommends vaseline as a local remedy against tuberculosis. Dr. von Bardeleben said that disease of the acetabulum had an unfavorable influence upon hip joint resection.—*Centralbl. f. Chirurgie*, August 18, 1892.

THE OPERATIVE TREATMENT OF CONGENITAL DISLOCATION OF THE HIP.

BY PROF. A. LORENZ.

Hoffa was the first to devise a scientific method of operation for congenital dislocation of the hip. His operation consisted in exposure of the dislocated femoral head by Langenbeck's posterior incision, followed by sub-periosteal separation of the capsule and of all the tendons inserted in the trochanter major and minor. The femoral head is thereby mobilized to such an extent that it can be lifted away from the ilium, the acetabulum is rendered accessible, and it becomes possible to form a new joint cavity for reception of the dislocated head. Lorenz has operated in one case by this method and found it very difficult to draw down the head and restore it into the acetabulum. He also observed that it is not the peri-tronchanteric muscles which act as the chief obstacle to reduction, but rather the shortening and tension of the muscles inserted in the tuberosity of the ischium, the semi-membranosus, semi-tendinosus and biceps.

Lorenz rejects this method of operation and advises that the articular cavity be formed before the dislocated head is reduced. He effects reduction by myotomy of the muscles attached to the tuberosity and spine of the ischium and of the adductors. His plan is as follows:

After vigorous extension and counter-extension, the adductors are divided subcutaneously. Through the same incision the muscles attached to the tuberosity of the ischium are separated at their insertion. While extension is being kept up a cutaneous incision, six to seven centimetres long, is made from the anterior superior spine of the ilium in an outward direction. The muscles attached here are divided and the anterior portion of the capsule exposed.

After opening the joint the articular cavity is rendered accessible by luxating the head, and the cavity is deepened. The head is then drawn down by slight extension and implanted in the acetabulum. After closure of the wound, the leg is fixed in a position of adduction.

Four cases are reported by Lorenz, in which this procedure was employed with success. The advantages of this method over Hoffa's are that it may be resorted to at any age and is less severe.—*Centralbl. f. Chirurgie*, No. 31, 1892.

THE TREATMENT OF BURNS.

BY DR. VON BARDELEBEN, Berlin.

Since 1889, all cases of recent burns coming to Prof. Hahn's clinic at the Berlin City Hospital have been treated with a dry bismuth dressing in the following manner. After thorough cleansing of the burned areas (which is usually difficult because most patients have previously applied liniments of lime water) the parts are irrigated with solutions of carbolic or salicylic acid (three per cent.). Corrosive sublimate is not resorted to because of the pain attending its use. After complete removal of blebs, under antiseptic precautions, the entire area of the burn is covered with finely powdered subnitrate of bismuth. Over this is applied a dressing of Brun's cotton, the upper layers of which are to be renewed when the discharges have soaked through, the lowermost layer not being removed.

This dressing has been more or less modified in the course of years. It was found that much bismuth was lost by insufflation, and to avoid this even layers of cotton were sprinkled with the drug and thus applied. This procedure occupied too much time, but a satisfactory dressing was finally obtained by rubbing equal parts of bismuth and starch into gauze bandages—a stock of which can always be kept at hand for emergencies. This dressing was found to fulfill all the conditions for antiseptic wound treatment. It may be allowed to remain for eight to fourteen days, and does not subject the patient to the annoyances and pain experienced under the "carron oil" treatment.

In a few cases, as for instance in young children, it may be necessary to change the dressing more frequently. Burns in the vicinity of the joints may also require more frequent renewal of the dressing. The larger dressings are usually soaked in warm water before removal. In cases of burns of the face it is sufficient to cover the affected parts with bismuth powder after disinfection and opening of the bullæ. The crusts are removed in from eight to fourteen days with vaseline or ointment, and cicatrization is usually found to have taken place. Conjunctivitis is treated with lead water, boric acid, sulphate of zinc. Transplantation according to Thiersch's is occasionally required, the same dressing being employed. In cases of extensive burns, when it seems probable that healing might occur without transplantation after removal of the first dressing, boro-glyceride lanolin is applied in place of bismuth.

Burns, resulting from corrosive acids are treated with remedies neutralizing the destructive effects of the acid. Thus, for instance, burns from sulphuric acid are treated with lime water (without addition of oil) burns from alkalies by irrigation with vinegar before application of the bismuth dressing. All burns around joints require early resort to passive movements and massage to prevent ill results.—*Deutsche Medicinische Wochenschr.*, June 8, 1892.

ABSCESS OF THE LIVER.

In an instructive and exhaustive paper on this subject, based upon a study of one hundred and eight cases collected from various sources, Prof. W. C. Dabney, presents the following conclusions:

1. Hepatic abscesses rarely occur as a result of injuries or diseases of the bones or other parts of the body, except those directly connected with the portal system of veins, or immediately adjacent to the liver.

2. Ulceration of the bowels is a common cause of hepatic abscess, but neither the morbid changes nor the symptoms are those of simple dysentery. It is probable that in most cases, at least, when the hepatic abscess is due to dysentery, the latter disease is amoebic in character.

3. An hepatic abscess may appear in two weeks from the commencement of the dysenteric attack, but the usual time is from four to twelve weeks. It is impossible to say how long a time must elapse after an attack of dysentery before all danger of hepatic abscess is past.

4. Abscesses originating in the bile-ducts, and those due to injuries of the liver itself, seem to be of comparatively rare occurrence. When due to injury the abscess usually appears in a few days.

5. Abscesses appearing in connection with general septicæmia or pyæmia, are probably nearly always multiple in number and small in size, but in rather more than half of all other cases the abscess is single and comparatively large. Abscesses due to gall-stones, however, are usually multiple.

6. Aspiration occasionally fails to reveal an hepatic abscess, because the needle may fail to enter it, or the contents of the abscess may be too thick to flow through the needle.

7. There are no means of determining with certainty the presence or absence of adhesions in a given case; pain, tenderness, and œdema over the seat of the liver, suggest the presence of adhesions, but are by no means certain proof of their existence. Even the up-and-down movement during respiration of a needle inserted into the liver is not a conclusive proof that adhesions do not exist, as was shown by a case recently under my care.

8. Of the symptoms and signs of hepatic abscess—pain, tenderness, and swelling in the hepatic region are by far the most important. Fever is present in a large proportion of cases, is intermittent in character, and except in pyæmic cases, rarely rises above 102.5° or 103°. Jaundice and ascites nearly always denote the presence of dense adhesions or gall-stones. Dyspnoea and cough are frequently present.

9. It is doubtful whether absorption of the contents of an hepatic abscess ever occurs; bursting is of frequent occurrence, the most usual direction being into a bronchus or the pleural cavity. Under expectant treatment death occurs in a large proportion of cases before bursting.

10. With respect to treatment, free incision and drainage give far better results than any other mode. The results of aspiration are rarely satisfactory, nor is aspiration itself entirely free from danger.—*American Journal of the Medical Sciences*.

OPERATION FOR WRY-NECK.

BY DR. PEARCE GOULD, London.

A lady, aged twenty-eight years, was brought to me in August, 1885, by the late Dr. Troutoeck, for very troublesome spasm of the left sterno-mastoid muscle. She first experienced trouble in the neck eight years before, soon after the death of a near relative; the jerking of the head had persisted ever since, gradually getting worse. The patient was a tall, thin girl, and delicate looking. There was no history of fits; she had had facial neuralgia, but not severe migraine. The spasm appeared to be entirely limited to the left sterno-mastoid muscle, and was so severe and constant as entirely to preclude the patient from mixing in society, and at night it was some time before she could get to sleep. Dr. Angel Money applied the constant current to the muscle on nine occasions, but with no benefit; indeed the spasms appeared to be increased in severity. So on September 10, 1885, with Mr. Hudson's assistance, I exposed the spinal accessory nerve by means of an incision along the anterior border of the upper part of the sterno-mastoid muscle, intending to stretch it and excise a considerable portion. In stretching it from the central end I felt the nerve gradually give way, and I pulled out a long, slender nerve from the jugular foramen and excised four inches and a half of it. No special symptoms were noticed from the tearing of the nerve roots. The wound healed without complication, and the patient returned home on September 23d. She called on me September 8, 1886. She was then in much better general health, her head was held erect and was quite steady. She could turn it freely to the left and about

half the distance to the right, and she was gaining power in it. The left sterno-mastoid muscle had completely atrophied, and the cervical portion of the left trapezius muscle was markedly smaller than the right. The patient was able to again mix in society, and was much pleased with the result of the operation. A year later (October, 1887) Dr. Troutbeck saw her and reported to me that she was "quite well, except for occasional fatigue felt in the neck ; no jerks."

The satisfactory result of this operation was, in my opinion, chiefly due to the fact that the spasm was limited to the one muscle—the sterno-mastoid. I have on two subsequent occasions intentionally removed the central end of the spinal accessory nerve in the same way for spastic torticollis. The operation is quite a simple one, the delicate roots of the nerve rupture and a long tapering filament is drawn out from the spinal canal. These two cases were treated last year, and it is too early to pronounce with certainty upon the result of the operation in them.

—*Lancet.*

EXCEPTIONAL VARIETIES OF HERNIA.

By DR. DUBAR, Lille.

The following facts furnished the starting point of M. Dubar's work.

A man, sixty-eight years of age, had been suffering for twenty years from a right direct inguinal hernia, the result of a strain. This hernia never descended further than the upper part of the scrotum, and the patient had always been able to reduce it, until the last time when symptoms of strangulation developed. When Dr. Dubar was called, the hernia was of the size of a hen's egg, being situated at the inner side of the groin, and presenting two lobes. The external lobe, the larger of the two, was resonant and reducible; the internal lobe was firmer, flat on percussion, painful and irreducible, presenting within and below the external orifice of the inguinal canal, behind the spermatic cord. The vas deferens was stretched like a rope over the superficial part of the tumor.

The tumor was evidently composed of two parts—one, external, containing a portion of small intestine, and reducible ; one, internal, situated higher up, containing a portion of small intestine, irreducible and strangulated, no doubt, at the point of communication.

Dr. Dubar opened the external sac, and found the intestines normal, but impacted firmly internally in the opening. A careful dissection was made, and a piece of intestine, five to six centimetres in length, folded on itself and tightly held, was disengaged, and as it showed no apparent lesion, it was returned into the abdomen. Recovery was uneventful.

The orifice of communication between the two sacs had the shape of a vertical slit, the upper end of which was connected with the external inguinal ring by a fibrous adhesion, the remaining portion having a certain amount of mobility. The internal sac was evidently a diverticulum from the external one.—*Bulletin de l'Academie de Medicine.*

A CASE OF GUNSHOT WOUND OF THE SPLEEN. SUTURING OF THE DIAPHRAGM. RECOVERY.*

By R. L. JAMES, M.D., Blue Island, Ills.

On February 24, at about 9 A. M., patient C. T., German, aged 23, while pushing gun through wire fence, breech first, accidentally discharged both barrels into his left side. The accident occurred six miles in the country and it was 8 P. M., before the messenger arrived for surgical aid.

I reached patient about 9 P. M., and on examination found that the loads had entered just anterior to axillary line on a level with the ninth and tenth ribs, emerging posteriorly a little above the point of entrance and on a line with the outer margin of the scapula.

The friends of the patient had filled the wound with cobwebs and straw from a neighboring barn with a view to controlling the hemorrhage. On removing these, together with the blood clots, it was found that segments of the ninth and tenth ribs had been entirely blown away by the discharge. A rent was visible in the diaphragm, through which the lacerated upper and outer margin of the spleen protruded, together with a part of the omental fringe. Patient's general condition at this time was fairly good and he suffered little pain, except when moved. He was placed under ether anesthesia for further exploration and treatment. The wound was thoroughly cleansed of the fragments of clothing, wadding, etc., and all shreds of lacerated tissue carefully trimmed away, the splintered ends of the ribs clipped off with bone forceps and ends smoothed with bone curette. The protuding omentum was ligated with chromic gut and cut away, stump thoroughly irrigated with warm sterilized water and returned to the peritoneal cavity.

On examination of the spleen, it was found that the laceration was about $1\frac{1}{2}$ inches in length and at its bottom were found three fragments of the shattered ribs imbedded in the splenic pulp. These were removed, together with a portion of felt gun wadding, and the laceration thoroughly irrigated with

*Read before the Alumni Association of the College of Physicians and Surgeons of Chicago, March 28, 1892.

1-6000 bichloride. The splenic wound was approximated to the wound in the diaphragm and carefully sutured in position by No. 8 silk, passing through both diaphragm and splenic capsule in such a manner as to close both wounds and thus prevent secondary infection of the peritoneal sac. The external wound was again thoroughly irrigated and packed with iodoform gauze and covered with bichloride dressing.

The following afternoon the patient's temperature was 101.6° F., pulse 110, and he complained of pain in the lower abdomen and developed slight tympanites. On the third day, temperature was 99° and all peritonitic symptoms had disappeared. From this time on, improvement has been uniform, progressive and rapid. Granulations sprang up rapidly and at present, all that remains of the wound are two healthy granulating ulcers marking points of entrance and exit of the charge. At no time has there been any appearance of pus in the wound nor have there been any septic symptoms. At present, the patient is up and about the house and is rapidly regaining health and strength.—*Chicago Med. Recorder*, May, 1892.

CASE OF REMOVAL OF A GLASS ROD FROM THE PERITONEAL CAVITY OF A WOMAN.

By W. GILL WYLIE, M.D.

Miss J—, aged twenty-five; family history is good. Previous history good, except for some trouble with kidneys in 1885. Menstruation always regular and painless up to October 18, 1891, and previous to that time had only a very slight leucorrhœa. Became pregnant after October 18, 1891, and on November 29th, during the morning, she introduced a glass rod, about six and a half inches long and about a third of an inch thick, having one smooth and one rough end, into the os uteri. She had considerable difficulty in doing this, but by sitting up and depressing the posterior wall of the vagina she could distinctly feel the cervix and the os uteri. After several efforts the smooth end was introduced and finally it slipped in so far that, though she could feel the outer end, she could not grasp it. There was a little flow and some pain, but she walked around during the day as usual. That night she had a pain on the right side of the uterus when she lay down. The next day she went to work as usual, but had a slight flow in the afternoon. On lying down or sitting down the pain in the right side was increased, but it subsided while walking. On December 1,

1891, she had a physician examine her, but he said the uterus was movable and that there was no rod in her. She went about as usual, but the pain continued. On January 10, 1892, she miscarried, and, on account of hemorrhage following, she called a physician, who tamponed her that night, but removed it the next day. She remained in bed for a week; then went back to work. When she got up from the bed she noticed a lump on the right side, and when she pressed upon it she had a cutting pain in the left groin. She consulted me at my office on January 21st. She then had a very foul vaginal discharge. I sent her to my hospital, and had vaginal douches given till the odor was subdued. She was given ether on January 27th, and the uterus and its appendages were found somewhat fixed, and I thought I could feel the rod in the left iliac region. My assistants examined, but were uncertain; and when I examined again I did not feel the rod with certainty, and said that it had been displaced. On opening the abdomen the peritoneum was found congested, and there was much muddy serum, slightly tinged with blood, in the cavity. After breaking up the adhesions about the appendages the bleeding from the adhering left tube was so free and its lumen so obliterated that it was removed along with the left ovary. While feeling around on the left side, where I thought I had felt the rod, I found a thickening as if the rod had been embedded; following up this indication the rod was found in the left lumbar region. In looking for the point through which the rod had reached the abdominal cavity, I decided that it was just posterior to the junction of left tube with the fundus of the uterus. No scar could be found in the vagina. The patient took a douche of "sixty drops of carbolic acid to the quart of water," the night before she introduced the rod. She had some fever after entering my hospital before, but not after, laparotomy. She had intense pain when the bowels moved before the operation, but has no pain now, and is as well as usual.—*Medic. Record*.

The Conservative Treatment of Tuberculosis of the Joints.—Dr. A. Bier's treatment is based upon the pathological fact that a congested lung possesses an immunity against tuberculosis. Upon the same principle he has made experiments in tuberculosis of the joints by the production of an artificial hyperæmia. The limb is bandaged firmly from below to within a short distance of the affected parts and above a rubber tube is applied. To prevent over-pressure the tube is covered with cotton. Under this treatment the majority of twenty cases were rapidly and markedly improved.—*Centralbl. f. Chirurgie*.

*Read at the March meeting of the Northwestern Medical and Surgical Society of New York.

Surgical Memoranda,

Pylorectomy—Dr. Doyen recently reported two cases of pylorectomy to the Paris Academy of medicine. In one of the cases, the pylorus was extirpated on account of cancer. The operation of Billroth was performed. After removal of the cancer, the openings in the stomach and duodenum were closed, each one separately. The continuity of the digestive tube was re-established at once by an anastomosis between the jejunum and the anterior surface of the stomach, which was incised in a vertical direction near the greater curvature. At the end of three weeks the patient commenced to digest solid food, and her condition improved steadily.

The second patient, a woman thirty-nine years old, was also operated for a cancer, but in this case the lesion was so extensive that after the extirpation, nothing remained of the stomach but the large cul-de-sac, the section beginning at the lesser curvature near the cardiac orifice and extending to the greater curvature at a right angle to the long axis of the organ. After closure of the wound, the capacity of the stomach was reduced to that of a tube. In this case the lower end of the line of sutures was united to the jejunum. A single point of suture became somewhat necrosed toward the ninth day, when recovery seemed certain, and peritonitis set in and produced death.—*Bulletin de l'Academie de Médecine.*

Resection of the Trigeminus within the Cranial Cavity.—Dr. F. Krause reported to the late German Surgical Congress a case where the second branch of the trigeminus had been resected in the spheno-maxillary fossa. Owing to a recurrence it was decided to resect the nerve in the cranial cavity. A flap consisting of skin, muscle, periosteum and bone, with base below, was formed in the temporal region. After retraction of the flap the dura was exposed and separated from the bones, and the finger was then introduced as far as the foramen rotundum. To expose the third branch double ligation of the middle meningeal artery was found necessary. The haemorrhage following separation of the dura obscured the field of view, so that the operation was performed in two sittings. The wound was packed with iodoform gauze, and five days after the first operation the brain was elevated with a spatula and the second branch grasped with a strabismus hook and resected to the extent of one-half centimetre. Healing ensued promptly and the neuralgic pains had been absent for several months.—*Centralbl. f. d. gesammte Therapie*, September, 1892.

Gonorrhœa in Female Children.—Dr. Cohen-Brach, concludes as follows, on this subject.—1. The affection known as vulvo-vaginitis in little girls, which is attended with a purulent discharge from the genitals, is usually a gonorrhœa. 2. This disease which is characterized by the presence of numerous gonococci, arises frequently as the result of indirect infection, although direct transmission by sexual intercourse is not rare. 3. The urethra is the typical seat of gonorrhœal inflammation, because its external outlet is especially exposed to infection. 4. With older children the vulva and vagina are affected to a less extent, so that the term, vulvo-vaginitis, is less appropriate. 5. An extension of the gonorrhœal process to the cervical canal, or further to the tubes and peritoneum, could never be observed with certainty, the cause of this being probably the firm occlusion of the external os. 6. On account of the rarity of this form of extension, the prognosis of gonorrhœa in young girls is far more favorable than that of the disease after puberty. The urethritis usually gets well spontaneously in a few months. Other complications such as vesical catarrh, arthritis, gonorrhœal ophthalmia occasionally occur. 7. As regards treatment local application to the inflamed urethra have proved useless. The most rapid cure was obtained by cleansing the genitals and rest in bed, together with internal administration of balsams.—*Deut. Medizin. Wochenschr.*

Operative Treatment of Compression of the Spinal Cord.—Dr. Urban, of Leipzig, has operated upon two cases of compression of the cord due to dislocation of the vertebrae and followed by severe paralytic symptoms. The method of procedure was as follows:

On both sides of the spinous processes incisions, three to four cm. apart, were made down to the transverse processes, these being united at their upper or lower end by a transverse incision. The spinal arches compressing the cord were then removed with the chisel close to their junction with the bodies and the cutaneous flap replaced and sutured. The disturbances disappeared in both cases.—*Wien. Medizin. Presse*, No. 37, 1892.

Treatment of Divided Tendons.—In an instructive lecture on this subject, Dr. M. L. Harris, of Chicago, calls attention to the following points:

1. The use of the sterilized silk suture.
2. The particular method of applying the suture. An ordinary round sewing needle, so as not to cut the tendon fibers, is threaded with sterilized silk as fine as the requisite strength will permit. The ends

of the tendon are cut square and the needle made to enter the end at its center, from before backwards, and a little to one side of the center laterally. Passing longitudinally up within the tendon, it emerges on the surface from three-eighths to one-half an inch from the end and to one side of the mid-line. Crossing to the other side of the surface, the needle re-enters the tendon, passes longitudinally down within it, and again emerges on the end at a point opposite to its first point of entrance. It is then passed through the other end of the tendon in exactly the same manner. It is then drawn tight until the ends of the tendon are in accurate apposition, tied, cut short, and the knot buried between the ends of the tendon.

3. The principle of interposing a layer of tissue between the sutured tendon and the sutured skin, so the cicatrix will not be common to both structures.

—*Cincinnati Lancet-Clinic.*

A Substitute for Senn's Plates.—Dr. von Baracz has made experiments with plates cut from various vegetables to replace the decalcified bone plates of Senn. He finally found that Swedish turnips were best adapted for this purpose. They are prepared in the following manner:

A thin slice, about one-half centimetre thick, is cut from a fresh turnip, and then from two to four oval plates are cut from the middle of this. An opening is made in the center of each plate, the diameter of which is made to conform with the diameter of the bowel. To harden them the plates are kept for four days in a one per cent. carbolic acid solution. The degree of firmness of the plates can be determined by drawing a linen thread through the edge. Experiments on dogs showed that the plates were completely digested in fifteen days. In an anastomotic operation for cancer of the pylorus the author employed the plates with perfect success.

—*Centralbl. f. Chirurgie*, June 11, 1892.

Method of Covering Unpigmented Spots in the Skin after Burns, etc.—Dr. K. Paschkis (*Med. Neuigkeiten*, No. 25, 1892) employs the following procedure to cover over unpigmented spots or scars following burns: A mixture of sulphate of baryta, yellow ochre and water, of the color of the skin, is made and laid on in a thick layer. This is then tattooed into the skin by means of an instrument containing from three to five well-disinfected needles. In this manner he has succeeded in coloring ugly vaccination marks and spots left after burns the color of the surrounding skin.—*Cincinnati Lancet Clinic.*

A New Method of Skin Grafting.—This is thus described by its originator, Ereberto Aievoli. An animal with well developed testes is castrated. The organs are washed in the usual salt solution and then cut in thin sections, which are placed in a salt solution. The granulation surface, after being cleaned, is covered with small pieces of the testicle, these being placed one or two centimetres apart. An antiseptic dressing is then applied. Good results are claimed, which Aievoli thinks are due to the marked biological activity of the implanted cells. In experimentation he used sections of the salivary and mammary glands and the testes.—*Boston Medical and Surgical Journal*, July 21, 1892.

Laryngectomy.—Dr. J. Solis-Cohen, reports a successful case of laryngectomy for cylindrical epithelioma involving the arytenoid and thyroid cartilages as well as the soft parts. The patient had suffered from dyspnoea for nineteen years, and in 1876, Dr. Lefferts had removed a large papilloma by intra-laryngeal procedures which relieved him greatly for ten years. About one year ago, he became very much worse, suffering from great dyspnoea, marked pain, cough and expectoration. A preliminary tracheotomy was performed, but it was found impossible to remove the growth by intra-laryngeal operations. The external tumor was then excised, the larynx split and every portion of the internal growth removed, the parts being afterward scraped thoroughly. Recurrence took place in four weeks and soon the tumor had attained more than its original size. Laryngectomy was therefore resorted to. There was a good deal of difficulty in the operation owing to the cicatricial tissues and other changes of structure and relations of parts which had resulted from the previous operations. The incision was made everywhere through healthy structures. The diseased skin and enclosed morbid mass were circumscribed by elliptical incisions in sound skin joining a vertical incision from the hyoid bone above and region of the tracheal canula below, and then a transverse incision was made at the level of the hyoid bone so as to make a T-shaped incision and two lateral flaps. The incision was carried down to the periosteum, and the soft parts were then separated with Allis's dry dissector, which answered admirably. During this time anaesthesia was carried on by chloroform through the tube by means of a funnel and an India-rubber tube. When the larynx had been separated from the soft tissues, the ordinary canula was removed and a tampon canula inserted, to prevent, as much as possible, any entrance of blood into the air-passages. For this purpose the von

Trendelenburg canula was used. An hour or two before the operation, a piece of ordinary surgical sponge was moistened and secured around the canula, and over this was tied a bulbous India-rubber tube. The patient's head was lowered as soon as this canula was introduced, and anaesthesia was subsequently kept up through the tampon canula, which leaked a little, despite all efforts to prevent it. The epiglottis being healthy, an incision was made through the hyo-epiglottic membrane and the epiglottis cut square off. The larynx was then tilted forward. The entire oesophagus was saved, instead of severing it at the level of the cricoid cartilage. The operator was able to strip the oesophagus and the mucous membrane from the tips of the arytenoid cartilages and larynx down to the base of the first ring of the trachea without perforating it. The larynx, with the first ring of the trachea attached to it, was then severed from the trachea, and the trachea was stitched to the skin in two flaps, formed by the sides of the original tracheotomy incision, which had embraced the second and third rings. The soft parts were then brought loosely together with sutures without any dressing in the pharynx; and a small, soft rubber stomach-tube was inserted into the stomach through an opening left in the upper portion of the dressing. This was inserted, thinking that there might be a necessity to use it for introducing nourishment; but it was found unnecessary, and it did some harm. An hour has been occupied in the whole procedure—anaesthetization, operation and dressing.—*Maryland Med. Jour.*, June 16, 1892.

should the bullet not readily be found.

4. Thorough drainage and the application of a most careful antiseptic dressing. If there is any bleeding, this can be controlled by an antiseptic iodoform gauze tampon, which will at the same time serve very well for drainage.

5. Control of encephalitis by free bleeding from the external jugular.

Over-Pressure in Children Causing Brain Mischief.—J. A. Diggle, L.S.A., London, reports two cases which show the inadvisability of attempting to force children forward in schools without sufficiently considering their different individual capacity for learning. Both cases were very similar in the outset, but the first was the most severe, and in both the illness was first thought to be enteric fever. The symptoms consisted in fever, headache, photophobia and slight delirium, vomiting and loss of appetite, and were promptly relieved by application of ice to the head and administration of bromidia (five drops every two hours). The author has found bromidia especially useful in such cases, as well as a very reliable hypnotic.—*The Hospital Gazette*.

Lateral Anastomosis of the Ileum for Malignant Stricture.—Dr. W. E. Ashton, of Philadelphia, reports a successful case of lateral anastomosis of the ileum for cancerous stricture by the use of the solid rubber ring. No irrigation of the abdominal cavity nor drainage was employed. He emphasizes the following points:

1. The necessity of frequently douching the seat of the operation with warm sterilized water to prevent the dangers of infection and shock.

2. That rapidity in operating is of great importance for success.

3. That early feeding by the mouth should be employed in all cases, especially in patients who are weak and exhausted.

4. That early feeding by the stomach does not add to the dangers of leaking, as the parts are perfectly secure, if proper rings and additional sutures are employed.

5. That an important factor in causing subsequent closure of the anastomotic opening is a direct union between the edges of the incision.

6. That the danger of subsequent closure of the artificial communication is materially lessened by using a steel punch in making the opening; by stitching the edges of the serous and mucous coats of the bowel together; by placing the lateral sutures of the ring as close as possible to the margins of the incision; and lastly, by making the anastomotic opening sufficiently long and of an oval shape.—*Maryland Med. Journ.*

Chronic Rheumatic Affections of the Joints.

—Dr. Schuller, of Berlin, distinguishes three forms:

1. Cases in which there is a formation of small nodules and fringes, especially in the folds of the synovial membrane.

2. Cases in which, besides the formation of fringes, there is involvement of the cartilage, and development of large tumors.

3. Cases in which ankylosis is developed.—*Wien. Med. Presse*, No. 37, 1892.

Treatment of Foreign Bodies in the Brain.—Dr. Luhn (*University Medic. Magazine*) as the result of a study of 316 cases, formulates the following rules for treatment:

1. Gentle probing to detect the presence of a foreign body.

2. Removal of the fragments about the wound of entrance, and thorough disinfection of the latter.

3. Avoidance of prolonged and elaborate search,

Antiseptic Memoranda.

Hydronaphthol in the Prophylaxis and Treatment of Cholera.—Dr. D. D. Stewart, of Philadelphia, suggests hydronaphthol as both a preventive and as a remedy for the cholera, after several years' experience with this drug in intestinal affections of bacterial origin. A remedy to be directed with effect against the contagion of cholera, should be a more or less ideal antiseptic; it should be but slightly soluble and decomposable, yet a germicide in aqueous solution, and both non-toxic and non-irritant in doses sufficient to produce a germicidal action. It occurred to the author that hydronaphthol would perhaps fulfil the desired indications. It has been found of signal service in intestinal affections, especially those of bacterial origin. It is related to phenol, being, like it, a benzol derivative; hence, presumably, cholera spirilla might also be vulnerable to it. It is but slightly soluble in aqueous solutions, is non-irritant and non-poisonous, and does not readily undergo decomposition; it would, therefore, be carried unchanged to the affected part of the bowel, even in moderate doses, without absorption occurring. To determine its actual value as an antiseptic and germicide in cholera, Dr. Ghriskey, of the Laboratory of Hygiene, University of Pennsylvania, undertook some experiments as to its influence on pure cultures of comma-spirilla. It was found in a series of experiments that in solutions of a strength of 1 part hydronaphthol and 7000 parts nutritive culture-medium, the drug proved distinctly antiseptic. It was also demonstrated that with a mixture of equal parts of a saturated aqueous solution of hydronaphthol and a bouillon-culture of this organism, the drug was germicidal within five minutes. Dr. Stewart thinks we are likely to have in it a medicament of extraordinary value, for it has been actually demonstrated beyond question that a proportion as high as one to seven thousand has an undoubted inhibiting effect on the development of the cholera-spirillum, and that a proportion of about one to two thousand exerted a prompt germicidal action. As one part to seven thousand equals about a grain to the pint, or to the avoirdupois pound, and as the contents of the small intestine, when the latter in its entire length is thoroughly distended, cannot amount to more than nine or ten pints, it would follow that, under any condition, but ten grains of hydronaphthol, if in solution, would be required to render the entire small intestine antiseptic against the comma-spirillum, preventing its development, while about forty grains, under similar conditions, would disinfect the intestine, promptly killing

any spirilla present. Fortunately hydronaphthol is non-toxic in doses probably much larger than would be sufficient for the latter effect. In cases of simple diarrhoea, in dysentery, and in enteric fever, the author has frequently administered a half dram in the twenty-four hours, continuing this often for weeks, totally without effect other than beneficial, but he thinks it certain that doses much larger than these may be similarly used. As a prophylactic against cholera, when, from exposure, the disease seems imminent, hydronaphthol should be taken in doses of from eight to ten grains four times daily for three or four days, and, subsequently, in from five to eight grain doses with the same frequency. This amount will probably at once exert an antiseptic effect, and at the expiration of twenty-four hours be germicidal. In early choleraic diarrhoea it should be used in quantities of ten grains hourly, or even half-hourly, until from one to two drams have been taken. Here it may be, and, indeed, by choice should be, combined with an opiate.—*Medical News*, October 1, 1892.

The Collodium Cotton Dressing.—Dr. P. Biedert calls attention to the fact that collodium adheres more firmly to the skin when it is applied over a very thin layer of cotton. By the application of several layers of cotton and collodium, large areas of integument may be covered. In cases of small wounds, especially those of the hands, this dressing is very useful. It may also be employed to hold moist dressings in place. The interposition of splints between the layers of collodium cotton, strengthens the dressing and makes it serviceable for immobilizing the smaller limbs. It may also be used to hold a catheter in position. This is done as follows:

After introduction of the catheter a thread is tied to the end and a few layers of the collodium cotton applied over the thread around the catheter; both ends of the thread are then fastened to the penis in the same manner.—*Wien. Med. Blaetter*, No. 33, 1892.

In answer to a correspondent we would say, that in Prof. Bergmann's clinic, at Berlin, instruments before use are boiled for five minutes in a one per cent. solution of carbonate of soda. In this solution they remain until required by the operator. Whenever they come in contact with anything not aseptic in the course of operation, they are resterilized by dipping them in the boiling soda solution. Instruments are thus kept aseptic and keen-edged and prevented from rusting. (For further particulars, see the October, 1890, issue of this journal.)

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Editorial Department.

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MASSAGE OF THE PROSTATE GLAND.

It will be generally conceded that during the last few years the field of massage in the treatment of various medical and surgical affections has been greatly extended. The gynecologist, the surgeon, and the neurologist have resorted to this agent with more or less success, and quite recently its effects have been utilized by the genito-urinary surgeon in the treatment of diseases of the prostate gland. In an interesting article in the *Internationales Centralblatt fur die Physiologie und Pathologie der Harn und Sexual Organe*, October 18, 1892, Dr. A. L. Ebermann details his experience with massage in afflictions of this organ. The procedure, as carried out by him, is as follows: The patient lies upon the back, or if strong pressure upon the gland is necessary, stands with the body bent forward. The masseur then introduces his index finger into the rectum and rubs the prostate, stroking it from right to left and vice versa, and pressing it against the symphysis; next he rubs the gland more or less strongly in a direction from below upward, or, more correctly speaking, from the point toward the base. Occasion-

ally it is advantageous to practice these manipulations over a fair-sized steel sound introduced into the bladder. The sittings last from five to ten minutes, or longer, and may be repeated daily, or on alternate days. The author thinks that by these manipulations it is possible to cause absorption of pathological products in the prostate by forcing them into the veins and lymphatics of the organ whence they are carried into the general circulation and excreted. In the selection of suitable cases he is governed to a great extent by the consistence of the organ as revealed by palpation, whether it be hard or soft, uniformly indurated or the seat of isolated hard nodules, or whether malignant disease exists. In acute prostatitis massage is contraindicated, because it tends to increase the already great irritability of the parts; it may, however, be employed with advantage in the later stages of the disease, when the gland is still somewhat enlarged, but not very sensitive, and there is still some difficulty in urination. Cases of acute and chronic prostatitis terminating in abscess formation are, in the author's opinion, greatly improved by massage after evacuation of the pus into the urethra, on the ground that it facilitates removal of the pus and reduces the swelling. It is in chronic prostatitis associated with swelling and in soft uniform hypertrophy of the prostate that this method is especially indicated, while firm and myomatous hypertrophies of isolated parts of the gland cannot be benefited to any extent by massage, although some improvement may be effected by practicing the manipulations over a bougie introduced into the bladder. A point to be remembered is that the median portion of the gland, if hypertrophied, projects into the bladder and cannot be reached by massage. Of course, in malignant disease and tuberculosis of the prostate, this method is not admissible.

SOCIAL CLUBS FOR DOCTORS.

The writer in his peregrinations has often been asked whether he was acquainted with Drs. Brown, Jones and Robinson, of his city. Now very probably he knew one of them, sometimes both, and seldom the whole three. And there is always a feeling of wonder in the mind of the inquirer when one answers

that he is not familiar with the personality of any one of them. As a matter of fact, in a very large city it is well-nigh impossible to become acquainted with all of one's brother practitioners, or even with anything but a small proportion of them. Yet social communion among the doctors is too much neglected, while there is no doubt of the benefit which some effort in that direction would result in. The formal meetings of learned societies are certainly a step towards social results, but the latter can only be achieved by a direct method. Large cities should have clubs composed only of medical men, whose scientific discussion should at all times be informal, where conversation upon other subjects, where the amenities of life, where the freedom of a home should promote friendly and kindly relations between men who, at the present time, meet only in the pursuit of their avocations, and have no opportunities of judging of and appreciating the social value which is so often hidden behind the armor of those who combat disease.

That this need is appreciated and known, is proved by the existence, in Chicago, of a practitioner's club for social purposes. In Philadelphia, the foundation of a similar club was discussed some time ago, and New York has followed by the formation of an association known to its members as the Circle of Willis. In this club friendly relations are promoted by periodical dinners during which medical topics are tabooed, and by reunions in which the flow of reason and the feast of souls form numberless tangents that reach all subjects of general interest.

COELIOTOMY VERSUS LAPAROTOMY AS A SURGICAL TERM.

We are indebted to Dr. Robert P. Harris, of Philadelphia, for the following remarks, which are published on account of their general interest :

When you perform an abdominal section, and report the case, under what scientific term do you describe the operation ? You probably call it "Laparotomy," because hundreds of operators are in the habit of using the same word, or its synonym, in a dozen countries and languages.

Where did this term originate ? You say it has a Greek derivation (the language of Greece having been the tongue of the first anatomists), and comes from two words, *lapara*, and *toma*, to cut. Now, what did the Greeks call the *lapara* ? It was certainly never the abdomen.

Did you ever look carefully into an ancient Greek anatomy to find out what the abdomen was really

called in their language ? The word belly appears ten times in the English version of the New Testament ; did you ever note that the original Greek has the word *koilia*, and never *lapara*, in these ten places ?

Rufus, of Ephesus, a distinguished physician and writer, born, A. D. 112, wrote a paper entitled "Names of the Parts of the Human Body," in which he has this significant sentence : "The omphalos (navel) is the hollow which occupies the middle of the *koilia*, where we cut the veins that nourish the foetus; the middle part of the hollow is the *akromphalon*" (top of the navel).

"*Lapara*" is a very old Greek term, and was applied in the time of Hippocrates to the parts between the short ribs and the iliac bone (the flank), and scores of old lexicographers have thus defined it. The operation for lumbar hernia, or *laparocele*, was a true laparotomy ; and so, also, is that of lumbar, or *laparo-colectomy*. The term *lapara* originally meant a hollow, and was for this reason applied by the early anatomists to the hollow of the waist. It was never used to designate a convexity.

The misapplication of the term "laparotomy," commenced in the year 1811, in the medical thesis of a Wittenberg student, of the name of Fiedler, who wrote in Latin under the title "De Laporatomia." He had witnessed a true laparotomy performed, on Oct. 17, 1810, upon a man of fifty with a diseased colon, as he lay on his right side. Fiedler wrote again in 1817, and took it upon himself to coin such distortions as "*laparo-gastrotomia*," "*laparo-raphia*," and "*laparo-hysterotomia*"—his desire seeming to be to supplant the term, "gaster," which really meant the belly, by the word "*lapara*," which a careful investigation would have taught him was not its Greek synonym. The mystery is how an error of this kind ever made the progress that it has in leading the medical world astray.

"*Koilia*" being the Greek word for abdomen, the natural synonym of *gastrotomy* in its old meaning is, "*coeliotomy*," pronounced soft (se-le-otomy). This is not a new coinage, except as to its terminal, for we have long had *coelio-paracentesis* for tapping the abdomen. The term, *coeliotomy* has been adopted by Prof. Sänger, of Leipzig ; by Dr. J. Greig Smith, in his *Abdominal Surgery* ; by Profs. Keene and White, in their *Text-Book of Surgery* ; and by a number of well-known medical writers. This adoption gives us the compound terms *coelio-hysterotomy* (Cæsarean section), *coelio-hysterectomy* (exsection of uterus through the abdomen), *puerperal coelio-hysterectomy* (Porro-Cæsarean operation, *coelio-nephrectomy* (abdominal exsection of the kidney), etc.

Original Articles.

THE PREVENTION OF STITCH OR MURAL ABSCESSSES AND VENTRAL HERNIA IN LAPAROTOMY.*

By Wm. H. WATHEN, M.D., Louisville, Ky.

Professor of Abdominal Surgery and Gynecology in the Kentucky School of Medicine; Ex-president of the Section on Obstetrics and Gynecology of the American Medical Association; Ex-president of the Kentucky State Medical Society; Fellow of the American Gynecological Society, of the American Association of Obstetricians and Gynecologists, and of the Southern Surgical and Gynecological Society; Consulting Gynecologist to the Louisville City Hospital, etc.

The practical importance of the subject to which I will briefly call your attention to-day, is emphasized by the fact that there are many women who have ventral hernia following abdominal section; and also that every laparotomist of large experience has often been annoyed with stitch or mural abscesses. I believe that these troublesome, and sometimes dangerous, complications may be usually prevented if we correctly appreciate and practice the best method of preparing the abdomen, making and treating the incision, and closing and dressing the wound. While it is hardly possible to make the skin over the abdomen *absolutely aseptic*, it may be made practically so, and if we prevent, or do not add, other conditions favorable to the growth of pathogenic bacteria, there will be no pus. The abdomen may be cleansed by frequent washing with sterilized water and soap, but it should be shaved immediately before the operation, and again thoroughly washed and bathed in alcohol, or ether, and the bichloride solution. The abdomen should now be carefully covered with sterilized towels or gauze, before the incision is made, and every precaution known to aseptic surgeons should be observed, to prevent the introduction of sepsis from the hands, instruments, sponges, etc. The incision should be made with a sharp knife, and if possible, directly through the linea alba so as to prevent injury to the muscles. Scissors should not be used, unless to divide the peritoneum, nor should haemostatic forceps, if it can be avoided. I now seldom use either, and have but little trouble in controlling hemorrhage without prolonging the operation. The opening should be long enough to allow the fingers or hand, as may be elected, to enter the abdomen without bruising the tissues. Retractors are seldom needed and should be avoided if possible, for too long pressure will result in traumatism that will impair the resisting powers of the tissues against

the invasion of micro-organisms; and the same is true where strong chemical germicide solutions are used in contact with the wound, for if strong enough to destroy pathogenic bacteria, they will also partially destroy the surface layer of cellular elements which are important factors in the prevention of suppuration. The peritoneum should not be separated from the walls, and if any of the tissue in the wound has been lacerated, or injured, by rough handling, haemostatic forceps, etc., it should be carefully and thoroughly cut away, for its presence prevents union and furnishes an excellent nidus in which bacteria may multiply and cause abscesses.

But every precaution known to aseptic or antiseptic surgeons may be rigidly observed in every detail before the incision is closed, and troublesome abscesses may follow, caused by improper suturing. The layer of fat in which the abscesses occur, is poorly supplied with blood vessels and nerves, and if the sutures are so introduced and tied as to cause strangulation and disturb the blood and nerve supply, abscesses will invariably result, it matters not how favorable all other conditions may be; and it is difficult to avoid strangulation if we attempt to coapt all the layers of the cut surfaces by a suture introduced through the entire thickness of the abdomen. Even when the sutures are tied so tightly as to cut off much of the blood and nerve supply and cause extensive abscesses, we have no way of knowing that the fascia has been coapted, and unless this is done the union will be imperfect and at any time we may have ventral hernia. But granting that the fascia could be closely approximated, the united surfaces would not be so evenly and widely brought together as in cases where each layer is separately sutured. In cases of large tumors where the abdominal walls are distended, the surfaces may be pretty accurately brought together with any method of suturing without the danger of strangulation, abscesses or hernia, but this cannot be done in most of the cases of laparotomy where the walls are tense.

In selecting a method of suturing the abdominal wound, we should adopt the means that will best prevent stitch or mural abscess and ventral hernia. There are other considerations, but these are the most important. Ventral hernia may occur in any case where the deep fascia is not held together until it unites firmly, and this can best be accomplished by separately suturing it. By this means the coaptation and union are perfect, without the danger of abscesses from strangulation of tissue, if we put an aseptic suture in aseptic tissue. Since I have practised the following method I prefer it to any other. I use the kangaroo tendon and with a straight or curved needle begin at the lower angle of the wound and

*Read before the Section on Obstetrics and Diseases of Women at the meeting of the American Medical Association, at Detroit, June, 1892.

close the peritoneum with a continuous stitch; the deep fascia is next closed in the same way, and then the superficial fascia and fat; the suture is now cut and the end buried in the tissue. The skin is united by superficial silk-worm gut sutures introduced with a curved needle. The suturing by the tendon may be done in one minute, and the silk-worm gut may be quickly introduced and tied. I prefer the tendon to catgut, because it is more easily made aseptic, and will not be absorbed until union is perfect, and I use the silk-worm gut, because it is one of the most aseptic sutures, as has been recently emphasized by the results of the bacteriological examination of sutures removed at the Johns Hopkin's Hospital. Only one piece of tendon is used in suturing an average abdominal incision. The silk-worm gut may be removed on the fifth or sixth day, and the surface will be dry and union perfect. But the buried tendon will hold the surfaces together for two or three weeks before its integrity is so impaired as to destroy its resisting power. I do not now expect to be often annoyed by stitch or mural abscesses, or ventral hernia. Dr. W. Gill Wylie and a few other operators suture the fascia separately with catgut, silk-worm gut, or silk, but the sutures tied on the surface over the incision are usually introduced through all the thickness of the wall. Dr. H. O. Marcy closes the incision with the buried tendon, bringing each layer of the wall together separately. He uses no superficial suture and protects the wound from external infection by covering it with iodoform collodion. His technique is beautiful and his results good, but the time required to close the abdomen is too long in the practice of the average abdominal surgeon.

If the silk suture is made aseptic in a sterilizer, or by boiling for an hour, it would not cause suppuration if introduced and buried aseptically in aseptic tissue.

LARGE MULTILOCULAR OVARIAN CYST-OPERATION; RECOVERY.

By GEORGE H. KIRWAN, M. D., Wilkesbarre, Pa.

Member American Medical Association, Penn. State Medical Society, Fellow American Surgical Association, Member Luzerne Co. Medical Society, Lehigh Valley Medical Association, &c.

Mrs. W—W—of Luzerne, aged 57 years, consulted me first in July 1890 (up to which time she had been in good health), for a swelling of the ankles and a noticeable enlargement of the lower part of the abdomen, which she believed to be a developing dropsy from renal disease; urine at that time contained a few casts and very small amount of albumen. I prescribed for her condition and did not see her

again until August 10th, of this year, when she was brought to my office by her son, a young physician, for examination and diagnosis. She showed then much general emaciation, with the *facies ovariana* well marked and an immense enlargement of the abdomen, measuring in girth over the greatest prominence, five feet six inches, in a standing position, and weighing two hundred and forty-one

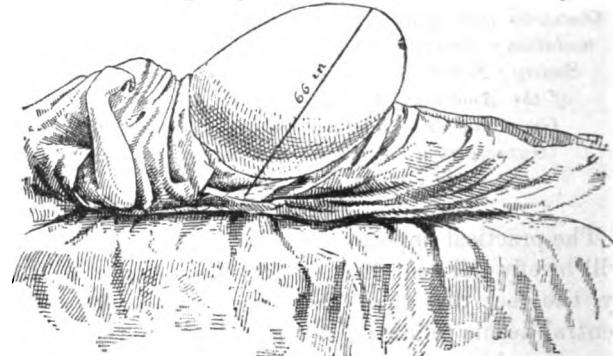


Fig. 1.

pounds. She had no pain and no history of painful attacks at any time since I last saw her, two years before. Indeed there were no unusual symptoms, except a rapid progressive enlargement of the abdomen which now interfered with locomotion; and for the past year, frequent slight uterine hemorrhages, although the menopause had been established eight years ago.

Palpation, abdominal and bimanual, and speculum examination showed a uterus somewhat congested and subinvolved but freely movable, separately from the abdominal growth, resonance in the flanks and a general dullness over the whole abdomen, up to the ensiform cartilage (with patient on her back), and a movable and easily circumscribed immense cystic tumor, pediculated, in the right pelvis. A diagnosis of large multilocular right ovarian cyst was made and operation advised as soon as necessary preparatory treatment would permit it. This was assented



Fig. 2.

to and the patient sent to her home in charge of an excellent skilled nurse. She was given a daily, hot bath, followed by vigorous friction of the whole body. Her bowels were drenched with saline cathartics and the colon unloaded of great quantities of old darkened faecal accumulations, the importance of

which procedure was impressed upon me by an article on "Medical Gynæcology," by Dr. Jas. H. Etheridge, of Chicago.

She received no solid food for four days previous to operation, nor for four days after operation, but, instead, was given one large tablespoonful in cold water every two hours, of the concentrated food known as Liquid Peptonoids.

After having carried out in detail in the preliminary preparation, as well as in the operation itself, the, to my mind, perfection of technique in abdominal section, as practiced and perfected by Dr. Howard Kelly, of Johns Hopkins Hospital, and believing in



Fig. 3.

Dr. Kelly's own language, "that a good operator with deficient preparations will sacrifice lives and wreck the health of more patients, than even a poor operator duly prepared," I operated on Mrs. W. on Sunday, August 28th, at 11 a. m. with the skillful assistance of Drs. R. H. Gibbons and Lewis Frey, of Scranton, and Drs. R. P. Taylor and J. V. Person, of Wilkesbarre, and nurse M. A. Reid. A three and a half inch incision in the median line exposed the cyst, which was tapped in the mother cyst, then partially brought out of abdomen; the trocar incision was enlarged, the hand introduced, and a number of small cysts ruptured and great

quantities of debris, broken down cyst walls, clots, etc., removed. There were no adhesions of any consequence, and I expected none, as the patient had no history of any inflammatory attacks whatever. The pedicle was clamped, transfixated, tied and dropped in the usual way. The incision was closed by nine silk worm gut sutures, dusted with aristol, dressed with sterilized gauze, cotton, and many tailed binder, in the usual way. Patient made a rapid recovery without an untoward symptom. The first dressing and stitches were removed on the tenth day, with complete primary union. Patient sat up on the twentieth day and was about her household duties on the twenty-ninth day.

Figs. 1 and 2 are made from photographs of profile pen sketches and are not perfect. Fig. 1 gives profile view before operation. Fig. 2 shows condition before removal of stitches ten days after operation, and fig. 3 is an actual photograph of tub and contents.

The sac, as here shown in figure 3, with its fluid and semi-solid contents weighed just eighty-one pounds.

This case is only especially remarkable in being, so far as I can determine, the largest tumor but one, ever removed in Pennsylvania. One removed by Prof. Goodell, of Philadelphia, weighed, I believe, one hundred and twelve pounds. At this writing Mrs. W. continues in excellent health.

12 South Washington St.

THE RECONSTRUCTION OF THE PELVIC STRUCTURES IN WOMEN. THE ADVANTAGES OF THE BURIED TENDON SUTURE.*

Dr. Marcy, of Boston, contributed an interesting, original paper with the above title. The group of operations included in pelvic surgery amenable to plastic treatment is carefully discussed. Dr. Marcy's original studies showing the advantages of the buried animal suture are well known to the surgeons of Europe and America. To him is unquestionably due the credit of having first applied animal sutures buried within the tissues for the coaptation of wounds, the advantages of which are now so widely recognized, and his methods are quite generally adopted. His bacteriological investigations first demonstrated the too common infective condition of catgut and the dangers arising from its use.

Many years ago he recommended, as a substitute for catgut, the tendons of animals and introduced the tendon sutures obtained from the tail of the kangaroo, collected for him for surgical use by the hunters in Australia. The applicability of the buried animal suture to the plastic surgery of the cutaneous

*Abstracts of a paper contributed by Henry O. Marcy, of Boston, to the American Association of Obstetricians and Gynecologists, St. Louis Sept. 1892.

surfaces, is now generally admitted, and the advantages to be derived from its use in the plastic surgery of the mucous surfaces are clearly defined by the author in this paper.

Dr. Marcy's method for the restoration of the perineum is widely known and has been very generally adopted. In this paper the subjects of vesico-vaginal fistula, anterior and posterior colporraphy, the removal of the hemorrhoidal plexus of vessels in diseases of the anal structures, are treated in extenso. The methods recommended greatly simplify these operations, and the results obtained are claimed to be more satisfactory than by any of the procedures usually advised and practiced. In Dr. Marcy's large surgical experience he has had ample opportunities for the careful study of the subjects under discussion, and for the last five or six years he has found it perfectly feasible by the method he advocates, to combine several operations at one sitting, thereby greatly shortening suffering and aiding the speedy restoration to health. These methods are so novel and interesting that we give the following abstracts:

"It very commonly happens that the injuries to the pelvic structures are multiple; that the cause which produces a laceration of the cervix uteri at the same time weakens or destroys the pelvic floor, the resulting product of which confronts the surgeon. The factorage of this problem consists generally of a lacerated cervix, a displaced uterus which has become greatly enlarged, associated with a pronounced endometritis; when the sphincter ani muscle has escaped injury and the levator loop is weakened by the loss of its transverse supports, a more or less pronounced anterior bulging of the bowel ensues;—a rectocele.

The eversion of the vaginal outlet thus induced causes, as a remote result, the prolapse of the anterior wall of the vagina, with vesical tenesmus produced by the falling of the fundus of the bladder;—a cystocele. The pathological series is often completed by a great dilatation of the hemorrhoidal plexus of veins induced by the difficulty of defecation, one of the results of the disturbed circulation of the pelvic vessels. Few of the modern innovations which have so completely revolutionized surgery are more pronounced than the facility and rapidity with which the surgeon is now able to restore these structures to their normal relationship.

Until very recently and, unfortunately, in accordance with the teachings of most of the text-books at the present time, this class of sufferers, even in our special hospitals, have been subjected to weeks of confinement in bed; the so-called preparatory treatment, and *seriatim* one operation after another of the four or five demanded for cure is performed, with an interval of some weeks between each, for the necessary re-

cuperation of the vital powers, thus requiring a period of several months' detention in invalidism.

This method of procedure is in a large measure necessitated, when the suture material used must be removed. Silk may, it is true, ulcerate its way out, if let alone, but few operators desire this, while wire and silk-worm gut must be removed. One of the most marked advantages of modern wound treatment under aseptic precautions, is the gain derived from *combined operations* which the use of the animal sutures has rendered possible. So far as I can learn, these are rarely practised, or their importance even in a theoretic way appreciated. For the last five or six years combined operations at one etherization have been with me a matter of almost daily routine practice, and their value emphasized in my teaching.

In illustration, in the foregoing group of injuries, the first operative measure should often be a thorough curetting of the endometrium, since glandular hyperplasia is usually coexistent with subinvolution and misplacement, next should follow the repair of the cervical laceration which may be single or multiple. If the conditions are pronounced an intra-uterine drainage tube is necessary. Third in the series of operative procedures may be placed the resection of the anterior portion of the vaginal wall. Fourth, the restoration of the structures on the pelvic floor, the repair of the perineum, should next be performed. Fifth, comes the dissection and removal of the hemorrhoidal plexus of veins. To this series I have not seldom added other operations, as for instance, the removal of superficial tumors, or even the operation for the cure of hernia. The abundant experience of the years teaches that the so-called preparatory treatment is not necessary in most cases, but as a rule is positively harmful. The general nutrition and vigor are lessened rather than increased by the period of detention in bed, while the nervous tension of the individual is oftentimes painful to witness, increasing daily as the time approaches for the much dreaded operation.

The reparative processes in these multiple wounds, when aseptic, progress equally satisfactorily, with very little, if any, additional suffering or danger, while the period of months is foreshortened to weeks, with a corresponding lessening of pain, loss of time, expense, and suffering."

"In resumé it will be seen that the above group of operations are based upon a tripod of simple facts.

First. Clean dissection in aseptic tissues aseptically maintained.'

Second. The restoration of the parts to their normal relations by means of the animal suture, preferably tendon, aseptically buried, and the wounds protected from external contamination and infection by the simplest possible methods of dressing.

Third. Retention of the parts at rest. The tissues aseptically held at rest for a few days only, take on the process of repair almost without pain, œdema, or suffering."

A CASE OF NON-SPECIFIC ABSCESS OF THE EPIGLOTTIS. RECOVERY.

BY LEONARD A. DESSAR, M. D., New York.

Visiting Laryngologist to St. Mark's Hospital and Laryngologist and Otologist to Mt. Sinai Hospital Dispensary.

Abscess of the epiglottis or of the larynx usually exists as a secondary disease in consequence of a perichondritis due to tuberculosis, syphilis, cancer, or constitutional troubles, or as the result of traumatisms, action of irritants, etc.

Idiopathic abscess is of extremely rare occurrence, and it is very difficult to determine the cause of the abscess. Cases of idiopathic abscess of the larynx have been reported by Tobold, Mackenzie, Dœrling, Stromayer, etc. Tobold describes a case where the left ary-epiglottic fold was the seat of the abscess and another where the cushion of the epiglottis was affected. Mackenzie observed ten cases of idiopathic abscess of the larynx. In six

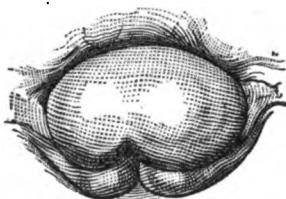


Fig. 1. Abscess.

cases the abscess occurred at the root of the epiglottis, and in four in one of the ventricular folds, in three of which the ary-epiglottic fold was the seat of the pus accumulation. In nine cases the abscess was opened with the laryngeal lancet and in four it burst spontaneously.

Dœrling reports the case of a young soldier who died two or three days after the development of pain in the larynx. Post mortem examination revealed an abscess at the base of the epiglottis containing about one teaspoonful of pus. œdema of the epiglottis and ary-epiglottic folds was found.

Stromayer relates the case of a soldier who died suddenly of suffocation in the afternoon although well enough to go on parade that day, complaining merely of discomfort in the throat. At the autopsy an abscess, about the size of an acorn, was found at the base of the epiglottis, which had produced a fatal œdema of the larynx.

Abscess involving the entire epiglottis is extremely rare, and but one case has been recorded where the epiglottis was alone affected, without involvement of the surrounding parts.

Chamberlain reports a case of cold abscess of the epiglottis probably of four years' duration. There was no history of injury or constitutional disease. I had recently occasion to observe the following case of abscess involving the entire epiglottis, in which there was no history of primary constitutional trouble.

Isaac Frommer, aged 49, a native of Russia, applied to me at Mt. Sinai Dispensary, March 1st, 1892, after consulting a number of medical men. He stated that he had been sick for several days, and during that time had been unable to swallow anything, not even the medicines prescribed for him. Four days before visiting the dispensary he began to suffer from a slight sore throat, and on waking at night and attempting to swallow found it impossible. Patient was very pale and weak, and suffered from dyspnoea which was so marked that he was afraid to sleep. Difficulty

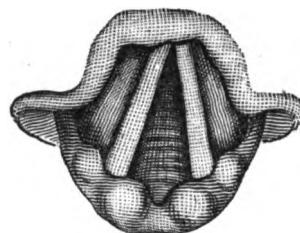


Fig. 2. After Operation.

of breathing was experienced during the inspiratory act, while expiration was accomplished with ease. Marked aphonia also existed. There was no history of syphilis, nor of swallowing an irritating fluid. The pulse was weak and irregular. Temperature slightly above normal.

Examination of the lungs revealed slight bronchitis, but no consolidation or cavities at the apex. On inspection of the fauces the pharynx was found markedly congested and its posterior wall covered with granulations. Complete dysphagia existed, the patient being unable to swallow a mouthful of water. I found it impossible to pass a catheter into the oesophagus. Laryngoscopic examination revealed a large epiglottis, rounded on the upper surface, serrated in the center, concealing completely from view the larynx. A glimpse was obtained of a portion of the arytenoid cartilages, which were found much congested but not enlarged or infiltrated. The mucous membrane covering the epiglottis, was tense and glistening in appearance, the epiglottis lying on the enlarged glands at the base of the tongue.

A curved bistoury was introduced and an incision made through the entire depth of the epiglottis on

its pharyngeal surface, and a quantity of blood and pus discharged. Calomel, five grains, was ordered, together with a gargle of permanganate of potash and hot applications. As the bistoury seemed inadequate for the operation, I requested the patient to present himself on the following morning at my office, when he stated that he felt somewhat relieved, but was still unable to swallow anything. Examination showed no reduction in size of the epiglottis. A Schroeder's curved bistoury was introduced and two incisions made the entire length of the epiglottis on its laryngeal surface. A large quantity of pus was discharged and the patient felt somewhat relieved. He was able to drink about a pint of strong milk punch, the first nourishment he had taken in five days. A view of the larynx could now be obtained and the vocal cords, inner laryngeal wall, and arytenoid cartilages were found very much congested, but no infiltration was present. Inhalations of cocaine and compound tincture of benzoin with menthol were given, and a catheter was passed without much difficulty into the cesophagus, which could not be done at the first examination, as already stated.

On the following day the patient again appeared at my office, but was so weak that I sent him back to the hospital after again incising the epiglottis. Here he remained for three days, flax seed poultices being applied to the neck; he was unable to swallow anything but milk and whisky, on account of the pain produced by the act.

March 6th, when he again appeared at the dispensary, the odor of pus was perceptible on his entering the room. A laryngoscopic examination was made, but the larynx could be seen only with great difficulty as it was filled with blood and pus. The epiglottis, however, was reduced in size.

The posterior wall of the pharynx was much swollen and resembled an abscess. The odor emitted from his throat was very fetid and scarcely endurable. He was sent home with a gargle of peroxide of hydrogen and a tonic of iron, quinine and strychnia.

March 9th, the patient visited my office and, on examination, I found on the posterior pharyngeal wall a swelling about the size of a hazel nut, which when incised, discharged pus. The epiglottis appeared almost normal, but was still somewhat enlarged and its edges serrated. The patient was feeling stronger and was able to take some solid nourishment besides the fluid. Only slight quantities of pus were discharged. A week later patient revisited the dispensary entirely recovered. The cuts taken from drawings made by myself, illustrate the conditions of the epiglottis before and after operation.

58 West 49th St.

THE TREATMENT OF VARICOCELE.*

By ALLEN PIERSON, M.D., Spencer, Ind.

It matters not what per cent. of the male population of this country is affected with varicocele, the fact remains that to him whose practice extends through any considerable length of time will come those who suffer, those who imagine they suffer, and those who imagine they are about to suffer with this disease, in sufficient numbers to justify a careful consideration of the methods for its relief.

It is not proposed to offer anything new in the way of treatment, but to hastily review some of the principal methods already in use in a general way, and to present some of their features as they occur to one who has at times been compelled to make a choice of a method for the relief of his patient, when methods, differing essentially were suggested. Not many years ago it would have been counted good practice to depend on palliative and hygienic methods alone in nearly all the cases. Eminent authority could have been cited in justification of non-interference in a surgical way in any case of varicose veins, but since the antiseptic revolution in surgery, the practice has changed so that we subject ourselves to adverse criticism if we fail to make use of the method which seems to us best for the radical cure of a number of the cases presenting themselves for treatment.

It is generally conceded that the greater part of the cases can be sufficiently relieved by palliative and hygienic treatment, but there will remain those in whom the mental condition, or the pain and inconvenience, or the deformity, or the aberration of the sexual functions, or danger to the structural integrity of the testis, or disbarment from organizations accepting only the able-bodied, demand surgical procedures for relief.

Recently there have been devised numerous operations for the radical treatment of varicocele. A late monograph by Dr. Lydston, of Chicago, mentions twenty-five or thirty, including some of the old ones, nearly all of which were named after the operator who had been the chief promulgator of some particular phase of the operation. Nearly all of these methods seek to obliterate the diseased veins; the object of some is to make a suspender of the scrotal tissues and by, relieving the tension of the dilated veins, give them the opportunity to recover their normal tone. These might be properly classed among the palliative methods.

*Read at the Twenty-Second Annual Meeting of the Mitchell District Medical Society.

Leaving out of consideration those methods in which caustics, remedies to coagulate the blood in the veins, and electrolysis are the agents employed to secure obliteration, the other purely radical methods seek to obliterate the veins, first, by subcutaneous deligation; second, by open deligation, and third, by open deligation with excision of a portion of the diseased veins. To these might be added a class of operations in which section of the veins is the method relied on for their obliteration, as, where the section is made immediately, as with a knife or hot wire, or where it is done gradually with the elastic ligature or the gradually tightening wire.

A clear understanding of what is to be done and the simplest and safest manner of doing it, are necessities, especially to one whose practice is private—away from hospitals or public institutions of any kind—in the homes of the people.

It is a well known fact that if veins are constricted, as with a ligature, and the constriction is kept up for a sufficient length of time, they cease to be blood vessels, and in varicose veins as well as normal veins, the lumen becomes obliterated and the vein exists henceforth as a small white cord in volume less than the walls of the vessel in its former existence—the ideal of the condition to be desired in the treatment of varicocele.

Hastily noticing some of the aforesigned methods, we see that the ligature plays an essential part. If the ligature destroys the function of the vein, why add the section with a knife which only increases the danger without in any way adding to the desired result?

The slow section involves too much danger to be used by him who cannot stand by and control the surrounding conditions. The dread of operations on varices no doubt arose, in part, from the results in such methods as Vidal's or Ricord's.

The method in which a section of the enlarged veins not to exceed—advisedly speaking—an inch or an inch and a quarter in length, is removed between ligatures and the stumps tied together with a view of shortening the support of the testis, seems like running too great a risk to furnish a support which is rarely ever needed and which, when needed, could be furnished later by a Henry's operation.

With simplicity and safety in view we avoid making extensive incisions in a location where they become peculiarly a source of danger unless there existed some abnormality. In the normal arrangement of the veins and in subjects where there are no calcareous deposits in this location, there ought to be no difficulty in isolating the veins from the vas deferens with its attending artery; this being done

subcutaneous ligation ought to be as easily accomplished as ligation in the open method.

It is fair to presume that the great majority of patients are built on the general plan, and with one on that plan let us go over the steps necessary in subcutaneous deligation: First, the room and bed of the patient should be gotten ready for a week's occupancy; second, a bath and the ordinary shaving and cleansing that precedes an operation by the open method; third, grasp the scrotum at the point selected for the operation, with the thumb and fingers of the left hand, letting the vas, with its attending artery, slip backward from the grasp. This should be done several times in order to study the geography, so to speak, of the situation. Then pinching in the skin with the thumb and forefinger, pass a narrow bladed bistoury close to their tips, in the track of which pass a stiff, eyed probe, threaded with the ligature—catgut or silk—then releasing the hold, the eyed end of the probe, bearing the ligature, going first, is made to re-enter the scrotum at the point of exit and passing this time over the veins emerges at the point of entrance. The ligature is now firmly tied around the encircled veins, the ends cut short and the knot allowed to drop into the scrotum which is dressed antiseptically, having been properly elevated. Great care should be taken that no septic material enters the tissues. Towels wrung out of bichloride solution should cover all the surface around the point of operation. The hands of the operator should be as thoroughly cleansed as for any operation in surgery. The preparation of the ligature should be perfect; it should not be allowed to trail over the field of operation, but be drawn from its containing vessel as needed.

The comfort of the patient, the freedom from complications, and the success of the operation depend upon cleanliness in a great measure.

The after treatment consists of rest in bed, a suitable diet, a daily loose movement of the bowels, and as little handling of the parts as is consistent with proper dressing. After the patient is able to be up a suspender should be worn till he is well and he should be told that at some future time, should there remain a redundancy of the scrotum, a secondary operation will be needed.

In the few cases that have fallen to my lot to treat in this manner, the secondary operation has been needed in none, and the operation has been ideal in all of them; and it is only because the tendency of the practice in these cases seems to be in the direction of the open methods that the above method is thus spoken of that it may be, in some measure, a defence for its use.

**NEPHROTOMY AND NEPHRECTOMY SUCCESSFULLY
PERFORMED ON THE SAME PATIENT FOR
MULTIPLE ABSCESS.**

By GEORGE S. PECK, M.D.,
Consulting Surgeon, Youngstown City Hospital.

J. C., aged 20, American; occupation, office boy; family history good; no tubercular trouble.

Past history. When six years of age, fell from second story, lighting astride of a joist in first story, causing free hemorrhage from bladder and suppuration in both groins. When eleven years old, was kicked in back by a playmate. Always after injury complained of more or less severe pain in region of left kidney. A few months later had an attack of scarlatina, with kidney complications. At seventeen had an attack of measles. At eighteen received an injury to left leg, causing necrosis or caries of tibia from ankle to knee joint. At nineteen had an attack of non specific iritis lasting eight or nine weeks.

March 25, 1891, had a severe chill, followed by fever; high colored urine, diarrhoea, increased pain in back and inability to lie down.

March 27, 1891, he was admitted to City Hospital, presenting marked symptoms of typhoid. The case was diagnosed typhoid fever and treated as such some four weeks, the temperature reaching as high as 104°; pulse ranging from 72 to 96.

April 22, the thirty-first day of illness, he attending physician detected a fluctuating tumor in the left hypochondriac and lumbar region. I was asked to see the patient in consultation, April 25, and diagnosed abscess of left kidney and advised nephrotomy.

April 26, saw patient again. During the preceding twenty-four hours he had passed two quarts of urine containing a large amount of pus, confirming my diagnosis. Tumor decreased in size and the other symptoms improved.

May 6, forty-fifth day of sickness, I made a simple oblique lumbar incision three and one-half inches long, down to the kidney; packed sponges in the wound around kidney. I then made an incision, two inches long, through the posterior or convex border and evacuated about three pints of pus. After exploring for calculi and finding none, I stitched the sac to the margin of the incision with four catgut sutures; thoroughly irrigated the cavity with 1 to 4000 bichloride solution, sutured the upper and lower angle of incision, packed the sac and wound with iodoform gauze, covering the whole with an antiseptic dressing held in position by a dairy cloth bandage, and put the patient to bed in good condition.

May 7, 8 a. m., has passed one pint of urine.
May 8, 8 a. m., has passed one quart of urine during the past twenty-four hours.
May 22, sixteenth day, removed upper drainage tube.
May 30, patient sat up the first time.
June 6, removed lower tube.
June 25, wound entirely healed with the exception of two sinuses along drainage tube tracts; redressed and irrigated daily.

Oct. 1, 1891, five months after nephrotomy, the sinuses which had been cleansed daily with antiseptic solutions, were still discharging pus freely, the microscope showing traces of pus in the urine; the patient suffered more or less pain with increased temperature at times.

I advised a complete removal of the offending organ, and after explaining to him the dangers of the operation, he consented.

Oct. 6, I again etherized the patient, curetted the sinuses, and made a simple oblique lumbar incision, four inches long, the same as in the nephrotomy. After exploring the kidney, I made a second incision two and one-half inches long, beginning about one inch in front of the posterior extremity of the first, and running vertically downward. The adhesions were numerous and very firm, and it was with considerable difficulty I released the kidney from its surroundings. I then passed an aneurism needle, armed with a double ligature of silk, through the pedicle between the ureter and vessels, ligating the ureter separately and the vessels *en masse*. I then lifted the kidney as far as possible out of the wound and ligated the whole pedicle. After cutting away the diseased organ, I irrigated the wound and sinuses with 1 to 2000 bichloride solution; inserted a large rubber drainage tube; closed the vertical incision with silk-worm-gut sutures; packed the wound with iodoform gauze and applied an antiseptic dressing.

Upon examination, I found the remains of the kidney to contain three distinct abscess cavities, one of which contained about four ounces of pus.

Oct. 6, 8 a. m., before operation, temperature 98 ½°, pulse 89. 4 p. m., temperature 101°, pulse 130, respiration 36. 8. p. m., temperature 101 ¼°, pulse 140, respirations 40. Pulse weak and thready, expression bad, face anaemic; patient restless, vomiting frequently, and complains of severe pain in wound. I gave hypodermic injections of digitalis and strychnia every three hours; whiskey by enema every two hours; hypodermics of morphia every four hours until quiet.

Oct. 7, 8 a. m., temperature 100 ½°, pulse 126, respiration 30. Has passed twelve ounces of urine during the last twenty-two hours. 8 p. m., temper-

ature 102 $^{\circ}$, pulse 130 and stronger; expression much better; wound dressed.

Oct. 15, removed drainage tube. Wound has been redressed daily. Oct. 27, sat up in bed.

Nov. 7, the patient has made an uninterrupted recovery. Has gained in flesh and strength and is allowed to sit up all day. Dec. 1, wound completely healed with the exception of a very small sinus which necessitates dressing every third day. Has resumed his duties as a nurse in the hospital. Thorough antisepsis was observed before, during and after both operations.

Sept. 1, 1892, sinus still remains open; daily amount of discharge about one dram; average amount of urine passed daily, one quart. Has been able to perform all his duties as a nurse.

VAGINAL HYSTERECTOMY FOR CANCER OF THE UTERUS.*

In his paper Boldt does not bind himself to any one method of operating, but gives preference to the following:

Absolute asepsis is strictly observed by him in all cases. All structures which readily break down are removed first, at the time of operation, with scissors and sharp curette. The uterus is then pulled down as low as possible with a volsella, and an incision made on the anterior vaginal wall, as far away from the vagino-cervical margin as he intends to resect the vagina; the mucosa is then stripped down and the bladder is detached from the cervix as far as convenient. Next the author prefers to open the cul-de-sac of Douglas, so as to enable him to suture the base of the broad ligaments under the guidance of his finger. After opening the cul-de-sac he introduces an iodoform-gauze tampon or a sponge into the peritoneal cavity, to prevent the intestines and omentum from prolapsing and hindering him in his subsequent work; he now attaches the peritoneum to the margin of the vagina with a continuous catgut suture. Next the parametria on either side are ligated as far away from the cervix as possible and cut; if one side is infiltrated by an inflammatory process, or one more than the other, that is the side first ligated. After the bases of the broad ligaments are ligated, the remaining part of the bladder is stripped off, and the uterus entirely freed anteriorly; now the peritoneum is also attached to the vaginal margin anteriorly. The remaining parts of the broad ligaments are now ligated and cut, going from one side to the other; the needle entering at the margin of the vagina, takes in

as much broad ligament as is thought desirable, and emerges again in the vaginal margin; the suture is then tied. This brings the stumps into a position that they can be subsequently readily placed intravaginal and prevents the ligatures from slipping. Boldt also prefers to remove the appendages at the same time with the uterus, without first cutting the adnexa, if he intends to remove them at all. After having extirpated the uterus, bullet forceps are used to pull the broad ligament stumps completely into the vagina, and then a full curved needle is passed through them on each side, entering at the peritoneovaginal, margin anterior and emerging posterior in the same manner; the suture is then tied. Now, the remaining slit in the vagina is closed with two or three sutures. Another suture is passed from one broad ligament stump to the other and tied; the vagina irrigated with Thiersch's solution and a small strip of iodoform gauze introduced. Patients thus operated make a very rapid recovery; they are sometimes discharged within ten days. The entire operation is done under nearly constant irrigation through a speculum especially constructed for such work. Boldt condemns the use of silk entirely for this operation, because it is no more secure or more aseptic than catgut, if the latter is prepared according to his method, and the convalescence is longer with silk.

When the parametria are thickened from old inflammatory processes and the uterus in consequence is less movable, so that he cannot use ligatures, he advocates the use of clamps, which have given him just as good results; and with them much time is saved. He does not always use them because he does not consider it as good surgery as when he can close the wound completely. The arguments against the use of clamps do not hold in his experience.

Boldt lays very great stress in operating far away from the apparently diseased structures, and in making a careful diagnosis of the pelvic condition as to how far the disease has advanced, which can be done only under an anæsthetic, before he begins to operate. He does not sanction a radical operation unless the cutting can be done in apparently healthy structure. He lays down full rules on the diagnosis of limiting the line for operation, which depends entirely on the individual experience of the operator. An immovable uterus does not contraindicate total extirpation, unless the fixation is caused by the invasion of malignant disease. The author insists upon the complete removal of the diseased organ, no matter how limited the disease seems to be. Although admitting the excellent statistics of Byrne, with the galvano-cautery, and the good results of high amputation, he quotes a number of cases where the uterus was extirpated for cancer which was seemingly limited to the portio or

* Abstract of a paper read before the American Gynecological Society, September, 1892.

cervix, and yet on examination, after the extirpation, independent carcinomatous nodules were found in the body of the uterus.

Boldt always removes the ovaries in cancer of the body of the uterus, on account of the liability of malignant disease existing or developing in these glands; but he prefers to leave them in cancer of the portio or cervix unless the patient has passed the menopause, or unless they are diseased, because the severe symptoms so often seen as the result of the abrupt bringing about of the menopause, remain absent, the glands retaining their physiological functions.

He appends a table of his own forty-four vaginal hysterectomies for cancer of the uterus with a mortality of three cases, in one of which the ureters were probably tied. Of four cases operated upon more than five years ago, two are still living without recurrence.

Boldt insists upon the necessity of more careful examinations by the general practitioner, and in case of doubt, the necessity of consulting a specialist. In this way only will we get a larger number of operable cases, and thus prolong many lives. Irregular or prolonged hemorrhages, occasional spotting of blood, offensive leucorrhœa, are important and suspicious symptoms, especially in women beyond thirty-five years. The author also lays great stress upon the use of the microscope as an aid in diagnosis, saying it is impossible to positively decide an early case without the aid derived from its employment.

OPERATIVE TREATMENT OF ERYSPIELAS.*

BY J. C. CARRICK, M.D., Lexington, Ky.

There has been said so comparatively little about the new operative treatment of erysipelas and the method is such a good reliable and safe one—easily carried out by every general practitioner—that a few minutes may be granted to me to give a short report of my experience with the same.

As is well known, Kraske reported a number of cases of severe diffuse septic phlegmon, cured by multiple incisions and scarifications. The favorable results achieved with this procedure have been frequently confirmed. As it seemed probable that this method, if powerful enough to stop a diffuse infectious inflammation of the subcutaneous connective tissue, would act in a similar manner upon an infectious spreading inflammation of the skin, Kraske tried it for the cure of genuine erysipelas, and his results were very encouraging.

My own experience dates from the 15th of April, 1890. I was called to see a boy who had received, some days previous, an injury to the knee joint which

had produced a general synovitis with marked distension. The usual antiseptic and surgical treatment was carried out, but several days afterwards I was called to see the case and found the temperature $104\frac{1}{2}^{\circ}$. An examination disclosed erysipelas around the knee joint, spreading upward and downward. On the next morning (twenty-four hours later) I used the modification of Kraske's method with marked success. It was performed without anaesthesia, and I used the vaccinating harrow to produce the scarification.

The operation was done as follows:

After careful cleansing of the parts, a bloody fence was made with long strokes of the harrow of the width of one-half inch, and two inches away from the erysipelas. The scratches were all deep enough to draw blood. A solution of corrosive sublimate, 1-1,000, was then rubbed into the wound and a layer of absorbent cotton applied, and fastened with a gauze bandage. This dressing was moistened freely with the same solution every twenty minutes. On the next morning the temperature was down to 99° and did not rise again, the erysipelas being permanently arrested.

A second case shows still more obviously that we should no longer treat erysipelas symptomatically, but that we can fight it best with the knife.

On Jan. 21, 1892, I was called to see Mr. G., aged 44, who, on the same day, had been attacked by a marked erysipelas on the left forearm. The temperature was $102\frac{1}{2}^{\circ}$. The history of the patient was that of an alcoholic. He claimed that he had injured his arm by a fall from a wagon while intoxicated. On the next day he became delirious and had to be held in bed. As there was no doubt of my diagnosis, with the assistance of Dr. Moore, I proceeded to operate. The bloody ring was made around the upper portion of the arm, and on the next day the erysipelas was found to have extended up to the bloody barrier. The whole invaded area was swollen and covered with blisters and very painful on pressure, but the disease had not passed beyond the fence. The elbow joint where it had spread very rapidly, was much swollen and infiltrated with pus. With the assistance of Dr. Hawkins, the patient was placed under chloroform, and two long incisions were made on each side of the joint. The wounds were thoroughly irrigated with strong solution of bichloride and dressed with gauze soaked in the same fluid. Next day the patient's temperature was down to 100° , the erysipelas had stopped spreading, and in a short time was cured.

In conclusion, I would say the Kraske method seems to me the most rational procedure of treating erysipelas, the scarification being made near the border and in sound tissue. The incision should not penetrate too deeply, but sufficiently to draw the blood as in vaccination.

* Read before the Fayette and Lexington Medical Society, June 18, 1892.

Clinical Department.

SALPINGITIS—CYSTIC DEGENERATION OF THE CERVIX.

BY H. MARION SIMS, M.D.

Professor of Gynecology at the N. Y. Polyclinic, Visiting Gynecologist to St. Elizabeth's Hospital, etc.

The first patient I show you here this morning is a woman I examined the other day. The examination, however, was not satisfactory at that time, and you will find that sometimes more than one is necessary to determine the precise nature of the trouble. I will go over the case somewhat more carefully to-day and try to make a diagnosis.

Her history is as follows:

She is twenty-nine years of age, has been married nine years, and had one child two years ago, the duration of labor being about five days. She began to menstruate when she was nineteen years old, and has been quite regular all her life. The menstrual flow lasts three days, is very scant and free from clots. Her general health has been good in every way, and she has never been sick in her life until the date of the birth of this child two years ago. She now complains of a bearing down pain all the time, and that something comes out at the vagina when she works hard; she has to hold her hand there on account of the severe pain. She has a good deal of trouble with the bowels, as they never act unless she takes medicine. Intercourse is very painful, pain being especially felt on the left side of the pelvic cavity.

From the history I have given you, it is plain that this woman's troubles are all connected with the birth of the child. Some injury had undoubtedly been done to some portion of the pelvis, which causes all this trouble. I made, as I already told you, an examination of her last week and have asked her to come back for this special purpose. I have been able to make a more satisfactory examination to-day. In passing the finger into the vagina, you will notice some slight laceration of the perineum and of the cervix which is not, however, sufficient to account for all the pains this woman feels. If you pass the finger into the left cul de sac and make pressure, you will find this patient has quite a large tumor on that side. The easiest way to feel the ovary of a patient you are examining for the first time, is to first hunt for the body of the uterus, have one finger firmly planted behind the posterior wall of the uterus and pass the other finger in the cul-de-sac which you are examining; then you will have the wall of the uterus as a

guide. If you slide your finger right along until you feel the tube, you can map out the whole length of the latter and see whether the ovary is diseased or normal.

We have in the case of the patient before us a well marked example of salpingitis. I was not able to discover this condition the last time, because she was very nervous, and the abdominal muscles were so firm and hard that it was almost impossible to make an impression upon them. It is not always easy to find the tube in a perfectly satisfactory manner, but in a case of this kind it is an extremely difficult thing. This salpingitis is probably due to some inflammation of the lining membrane of the uterus, which has gradually increased in severity.

Now, here we have, as I say, a case of lacerated cervix with no enlargement of the uterus at all, and this salpingitis which is more or less of recent origin. The treatment of this case should be to send the patient to hospital if she has time to go through a surgical operation. I know she has not time now, and consequently we will have to let her go without surgical treatment for some time. I would sew up the cervix and at the same time treat the tube according to the most recent method of procedure.

This treatment was introduced into this country by Dr. Polk, of Bellevue hospital, and consists of a thorough curetting of the interior of the uterus, packing it with iodoform gauze, and setting up a profuse drainage from the uterine cavity, which in the majority of cases is capable of draining a cyst of the Fallopian tubes as well. In what manner it induces a drainage of pus and other fluids from the tubes, I am not prepared to say, but certainly it does accomplish a splendid result in the majority of cases. Instead of doing a laparotomy on this patient, I should advise more conservative means: Have the uterus thoroughly dilated, packed and drained. As I want to get rid of the extreme sensitiveness this patient complains of since the birth of her child, and as a means of affording her temporary relief and preparatory to an operation at a later date, I will apply boroglyceride tampons to the lateral cul-de-sac, and if we cannot reduce this sensitiveness somewhat, it will do no harm and may be the means of doing some good. There was a time, not long ago, when all these cases were operated upon by abdominal section. Six years ago a woman who came with a pain in her side to a gynecologist, would not be safe in his hands, but now I am very glad to say the tendency in all these cases is towards conservative surgery, and in all probability my friend, Dr. Polk has done more than any gynecological surgeon in this country for the introduction of this method of treatment in this class of cases. He is not only so conservative that he will treat cases of

this kind by drainage, but all kinds of cystic degeneration of the uterus as well. He goes still further than this: In cases of cystic degeneration of the ovary, where the organ is bound down by adhesions, he punctures the cyst, permits the fluid to escape, and stitches it to the abdominal wall.

I think this is an advance in the right direction in saving patients from indiscriminate laparotomies.

But to come back to the case before us, I wish to say that I have learned more about the swelling on the left side. She undoubtedly has here a femoral hernia. Every time the bowels move, this swelling appears on the left side, and every time she works harder than usual, it pains her more and she has to push it back. This is probably due to some strain or injury received at the birth of the child.

There is one form of disease of the cervix that is probably productive of more serious after effects than any other and that is an old, neglected laceration. In these cases we may have the uterus either retroverted or prolapsed, with considerable hypertrophy of the anterior and posterior lip in which the erosion has taken place, this gradually developing into a cystic degeneration of the cervix. This form of disease is, I say, productive of more serious after effects than any other disease of the cervix we have to deal with. You may often see this cystic degeneration in women who are fairly advanced in life—about thirty-four or thirty-six years of age. A laceration has probably taken place some years previously and has not been deemed of sufficient importance to attract the patient's attention, until she is reminded of trouble there by some disagreeable discharge. She goes to a doctor who examines her and finds she has cystic degeneration of the cervix, quite an advanced stage of cystic degeneration of the glands. It does not do any good in this disease to puncture the cyst and try and cure it in that way. It does not do any good either to perform an ordinary lacerated cervix operation at that late date, because you will find that the cysts that have formed within the cervical tissue have undergone such changes that they have softened all the surrounding structures, so that a suture would not hold in that mass. If you use any suture to sew up the cervix it will tear through in a few days, the wound will gap open, and your patient will be in a worse condition than before.

The patient I now show you has been through such a condition as that. It is my firm conviction from watching a large number of these cases, that beyond any doubt this is the origin of epithelioma of the cervix. The glands undergo a degeneration, with formation of fluid, and the entire structure breaks down till we have one great mass assuming gradually a carcinomatous character.

In such a case there are one or two things to be

done: Thoroughly curette out the whole diseased surface, leaving nothing but a shell, or perform total extirpation of the uterus. Of course, total extirpation of the uterus is a dangerous operation and you would prefer the less serious one of enucleation. If you get hold of the case before this time, it is better to do a preventive operation, and that consists in excising the whole diseased tissue and then sewing up the cervix, as in an ordinary lacerated cervix operation. That is what has been done in the case of the patient before you, and I will now show you what a beautiful result has been brought about and what we can secure in all these cases. It is an operation that has succeeded in my hands in every case I have done it, because I have performed it at the right time before the disease has progressed too far.

Now, the operation is not a difficult one, though it may appear to be so, and when you see it performed, it looks horrible because of the hole that is left in the cervix. It is a simple exsection of the diseased cervical glands. You excise the whole of the diseased portion with the blade of the uterotome, and if the disease is extremely advanced and the cervix greatly hypertrophied, you have to be careful and not perforate into the peritoneal cavity; this is a very mortifying thing to do when excising a portion of the cervix, but it is not a fatal accident by any means, and the patient generally recovers. When you perform an exsection of the entire cervix, excise the diseased part as you would remove the core out of an apple, and when you are through with the operation you have a large defect extending up beyond the os internum. You will be surprised to see what a perfect result will be obtained from an apparently severe operation. The operation may be performed in a very few minutes. The blade of the uterotome is the instrument to use in all forms of lacerated cervix. When I started out to practice medicine twenty years ago, and wanted to be equipped for operations for lacerated cervix, it cost a small fortune to buy the different instruments required for these procedures. Now-a-days it is different. It formerly required eight or ten pairs of scissors to do an ordinary operation for a lacerated cervix. You had to have a pair of scissors curved to the left and a pair curved to the right; a pair of scissors curved to the right and left and another pair curved at an angle of 45 degrees, etc. Now, I will undertake to do any operation on the cervix with this knife, one pair of scissors curved on the flat, and two tenacula. I can perform a lacerated cervix operation and have my patient in bed in this way by the time the man with the scissors is ready to put in the stitches. It is done in the following manner:

Take hold of the cervix with the tenaculum and pull it down in the axis of the vagina, and with this uterotome begin at the one angle of the laceration and

with a sawing motion cut around it as rapidly as possible. Then you are ready for the stitches. You have a wound now that heals by first intention, provided your operation has been done with all the aseptic precautions of the present day. A claim has been made in certain quarters, that an operation with the knife in this way is a bloody one. Well granted that it is. You do lose, it is true, a little more blood, but the amount of blood lost is fully compensated for by the amount of time saved. The operation is completed in from ten to twenty minutes, while, when performed with the scissors, it lasts, at least, from thirty to forty minutes. The time saved by rapidity of operating, is an advance in the right direction, and if there is a little more bleeding it does not do any harm, and should not militate against this method of operating. After the operation you have to insert something in the canal to keep it open. You can put in a uterine stem and keep it for a week in position with an iodoform gauze tampon in the vagina. At the end of a week you can withdraw it and remove the stitches. Two or three days after removal of the stitches, you can introduce a self retaining stem and let the patient wear that for three or four months, if necessary. In ninety-nine cases out of a hundred the use of a small self-retaining stem is indicated, and you will find that the uterus will tolerate it without the least trouble. At the end of that time you may remove it and your patient is well.

It is now three years since this operation has been performed on the patient before you, and I am perfectly satisfied she would have developed carcinoma of the cervix ere this, had it not been resorted to. You can see how normal the cervix looks, how normal the secretions are, and how normal the rest of the uterus appears, except its position which is slightly retroverted. She comes here on account of this retroversion and pain in the back.

The satisfactory results brought about by this operation on the cervix, consist in a complete arrest of the reflex symptoms due to the disease. The reflex symptoms in this class of cases are too numerous to mention. As you can readily imagine the foremost ones are nervousness, pains in the back and irritability of temper. This class of patients are cross with their husbands, their children and everyone. After this operation has been done these symptoms disappear altogether. A lady in this city, upon whom I operated last April, had been for years the subject of hysteria, and the children, and husband said to me : "Doctor, please do something for her, as she is almost unbearable at home. She flies into a temper at the least provocation and we have to look about for fear of saying something to offend her."

She had been in that condition for years. She had been treated by nerve specialists without any benefit. I performed this operation and the result was that she recovered entirely. She went to Europe two months after the operation and returned to my office about two weeks ago. She told me she had not a single disagreeable symptom since she went away. Her temper has improved very much and the entire nervous system has undergone a complete change.

FURUNCULOSIS OF THE SCALP; PEMPHIGUS; LUPUS "ULGARIS; LUPUS ERYTHEMATOSUS; CAR- BUNOLE.

By W. S. Gottheil, M. D., New York.
Visiting Physician to the North-Western Dispensary &c.

This little patient is suffering from a malady not uncommon among the children of the poorer classes. It begins as a furunculosis of the scalp, and from the pus thus formed autoinoculation takes place to the most varied parts of the body, so that, as in this case, we have a pustular eruption that affects the scalp, trunk and legs, with a paronychia of all the fingers and one or two of the toes. The entire scalp is studded with abscesses, some of which are quite large. The abscesses on the body are somewhat smaller than those on the scalp, while each one of the fingers is the seat of an inflammatory affection of the root of the nails developed by scratching. These children infect themselves and their playmates, and it is not uncommon to find several children of one family affected.

The treatment of this affection consists in laying open freely and scraping out every abscess, the application of an antiseptic bandage, and the prevention of further auto-infection by a secure dressing. For this purpose an iodoform or aristol lanoline salve, ten grains to the ounce, and an occluding bandage is necessary. Each finger must be dressed with the same ointment and separately bandaged. Tonics are to be given internally since malnutrition is the cause of the original infection.

The next patient I present to you to day, has an eruption of blebs chiefly situated upon the face, the lower extremities, upon the sheath of the penis and around the genitals. Each bulla is tense, filled with transparent serum and situated on a reddened base. The skin around is normal, the older bullæ, which appeared a few days ago, have already dried up, and the removal of the crusts reveals a reddened but normal derma beneath. The smallest and most recent bullæ are pin-head in size ; while the largest one attain the dimensions of a large bean.

This malady is not so rare in children as is usually supposed, but in an adult it is an infrequent and quite fatal disease.

The difficulties of diagnosis in children between acute pemphigus and vesicular urticaria are great and the distinction cannot always be made.

Treatment in this affection is of but moderate efficacy. We will give this patient a mixture of zinc oxide ointment and diachylon ointment in equal parts for the excoriations, and put him on Fowler's solution internally, beginning with five drops three times a day and running it up to the point of tolerance. The prognosis in a case of this kind is fair.

The next patient is a male aged 42, who comes to consult us about a chronic eruption that has been situated on the outer surface of the left thigh for a number of years. The patch is about eight inches by five in size, and is partly cicatrical, and in places covered with scabs. The scar tissue, where present, is soft and smooth, and though the glandular structure of the skin, hairs, etc., in the neighborhood of the affected region, have been evidently destroyed, the new connective tissue is not a bad substitute for the normal skin, there being no contraction or ridging. Scattered all through the sore and in the midst of the cicatrical tissue, are a number of small pea-sized, brownish-red, soft papules, which are hardly perceptible to the touch. If we plunge a pin into one of them, we find it to be composed of a soft, semi-organized tissue, in which we can move the point of the pin with freedom. On the left thigh is another smaller patch of similar character, while on the left buttock is one in which the process has stopped and the skin is replaced by a soft scar.

The diagnosis in this case lies between syphilis and lupus vulgaris. Its intense chronicity, lasting for years, its isolated location, the superficial scar and absence of any other symptoms of constitutional infection are against the view of the disease being syphilis. The lesion of the soft, red papule is characteristic. A syphilitic derm lasts for months while lupus lasts for years. A syphilitic papule is hard, ham-colored, spreads peripherically and ulcerates in the centre. Above all, syphilitic papules never reappear in the scar tissue that marks the ground the disease has passed over.

In the treatment of lupus vulgaris we must be careful to do nothing that will cause a greater scar, and more deformity than the disease, if left to itself. In the course of years the process will in the patches on the thigh, as it has already ended in that of the buttock. Each lupus nodule should be destroyed, for in each there is a nest of the tubercle bacillus that causes the disease. We may dig into each nodule

thoroughly with a pointed stick of nitrate of silver, or we may use a pointed glass rod dipped in nitric acid for the same purpose. A small, sharp Volk-mann's spoon may be employed and each individual mass shelled out, or the negative pole of a galvanic battery of sufficient strength may be connected with a needle, which is inserted into the tubercle to destroy it. Internally, iodine, iron and the syrup of hypophosphites are useful, as are tonics in all forms. Iodoform in half grain doses long continued seems to have a specific action upon the malady. As long as the disease is situated in its present locality there is no necessity for very vigorous treatment.

The next patient is a female aged forty four, who presents a marked contrast to the second case we have described. She tells us that fourteen years ago a sore appeared on the upper lip, which extended into the nose and lasted up to two years ago. It destroyed the cartilages of the nose, leading to sinking in and deformity of the tip and cicatrical contraction of the upper lip. On the forehead there is a patch which appeared two years ago and which has been spreading ever since. It is red, non-infiltrated and slightly scaling. No central breaking down, with a little superficial scar tissue. On the right side of the neck is another focus of exactly similar aspect.

The diagnosis here lies between lupus erythematosus and lupus vulgaris. We do not find any of the papules of lupus vulgaris present, and that alone, suffices to exclude that disease.

The treatment of this affection is only moderately satisfactory. The disease lasts for many years, it progresses almost to the point of healing and then breaks out afresh. The affection is not due to any specific organism, and hence cannot be attacked in the way lupus vulgaris can. The various reducing agents are as efficacious as any. We will put this patient on ichthyol as follows:

B	Ammonium Sulpho-ichthyolate	3 j.
	Starch	3 ij.
	Petrolatum	3 vi.

This ointment is to be kept applied to the part continuously, and to be renewed twice or three times a day.

The next patient is a male aged fifty four, who comes to the clinic with a large sore on his left leg. An immense parenchymatous inflammation surrounds it, so that the entire indurated mass measures several square inches. The skin is tense, brawny, and in the centre is a deep irregular ulcer, two inches in length, filled with fragments of broken down tissue and dark green, foul smelling pus. The patient tells us that it appeared first as a small vesico-papule which gradually spread and broke.

We have here a carbuncle, that is, an acute, circumscribed inflammation of the subcutaneous connective tissue which is so intense in character as to lead to sloughing. The man's general health is broken down and it is very probable that he has sugar in his urine. The old practice of treating this affection by crucial incision is no longer in vogue, since the mere relief of tension does not do much good. This patient should be placed under ether, the entire mass cleaned out with a sharp spoon and the resulting wound dressed antiseptically. As he refuses to submit to this plan of treatment, the best we can do for him is to apply an iodoform vaseline salve, fifteen grains to the ounce, and put him on to nictreatment. The sloughing mass will come away of itself, but at the expense of a greater amount of destruction of tissue than would occur if it were surgically removed.

ABDOMINAL TUMOR.

BY JOHN A. WYETH, M.D.

Professor of Surgery at the New York Polyclinic; Visiting Surgeon to Mt. Sinai Hospital, etc.

The first patient was a woman, thirty-five years of age, who presented herself for the treatment of an abdominal tumor. She first had trouble with her bladder five years ago, and two years later a swelling gradually developed in the region of the abdomen. When in the sitting position she was unable to pass her water, but micturition could be accomplished in the erect position owing to pressure of the tumor. No change was noticed in the urine. She wore a pessary for two years, and obtained some relief. She is a married woman, but has never borne any children. She never had any trouble with her menses at any time. Last year in June, however, the menses were less abundant than normal. She has never been tapped.

The abdomen reveals on examination a symmetrical swelling more prominent on the right side. It is smooth and round, and no indentations are noticeable. For these reasons intestinal obstruction can be excluded. When free fluid water is present in the peritoneal cavity, or what is called ordinary ascites, it can be distinctly made out by placing the hand flat on the side of the patient's abdomen and then on the slightest touch of the finger a wave of fluctuation can be felt. If it is a unilocular cyst the same sensation would be imparted to the hand; but if the cyst is multiocular the ripple would be greatly diminished. The patient gives no history of a rupture, or any tumor except a general swelling of the abdomen.

Let us go a little further: suppose this was an ovarian tumor. She has been so indifferent to its

development that she does not give a closely connected history which would enable me to make a diagnosis. She does not know where the swelling began. In fact the only clue she gives is the fact that the pain began down in the pelvis, so that it might naturally be inferred that this process had started in the pelvis and developed from below up. By vaginal examination more light may be thrown on the subject, and probably the conclusion may be arrived at that she has a new growth there which will demand operative interference. The only way to settle this diagnosis, once for all, is by an operation, and hence the lecturer urged performance of an exploratory laparotomy.

The patient was examined and a probable diagnosis of a pelvic neoplasm made. The specific gravity of the urine was found to be 1010 with a trace of albumen. There were a few casts present with a number of flat round cells and pus cells. The patient also had some metritis which might be due to pressure of the large tumor. The lecturer advised an operation in this case.

In all these operations for any form of tumor of the abdomen, the patient ought to be put on a liquid diet and the kind of food that will leave as little residue as possible. In operating on pelvic tumors he did not believe in the position suggested by Tredelenburg for the purpose of causing the intestines to gravitate towards the diaphragm. The same benefit may be obtained from the position by a slight elevation of the pelvis, as for instance, by raising the table a little, or placing a pillow under the pelvis. In that way the proper tilt of the body of the patient may be effected.

Operative Treatment of Pott's Disease.—

Vincent (*Rev. de Chirurg.*) advises the drainage of abscesses and the removal of diseased bone in Pott's disease of the vertebrae. The drainage-tube is to be passed in U-form, either entirely in front of the vertebrae or directly through the bodies in front of the spinal canal. The operation is carried out by a vertical incision on each side of the spinal muscles, joined by two others drawn horizontally outward, converting them into T-incisions. One or more ribs are resected to give access to the front of the spine, and then a blunt, curved probe is passed in front of the vertebrae from one side to the other, and the drain drawn through under its guidance; or a curette is made to bore through the body of the affected vertebra obliquely forward and inward until it strikes an instrument held under the periosteum on the other side. The latter method is employed where the body of the vertebra is broken down, and a curved drainage-tube is drawn directly through the bone.—*University Med. Magaz.*

Abstracts and Selections.

DANGERS OF INDISCRIMINATE ATTEMPTS AT THE REDUCTION OF STRANGULATED HERNIA BY MANIPULATION.

By W. H. BENNETT, F. R. C. S.

The main possible disasters which may immediately follow upon attempts at the reduction of hernia by taxis, may be summed up as follows : 1. Bruising of the bowel ; 2, rupture of the bowel walls complete and incomplete ; 3, laceration of adhesions ; 4, rupture of the sac ; 5, haematocele (in cases complicated with hydrocele) ; 6, haematoma of scrotum and surrounding parts; 7, reduction of the whole hernia with the sac (reduction *en bloc*).

1. *Bruising of the bowel.*—Some bruising, as shown by subperitoneal extravasation, of large or small extent, about the herniated bowel will be found in the majority of cases which have been submitted to taxis unless extreme gentleness only has been used. The extent and severity will naturally depend, for the most part, upon the amount and direction of the force applied and to a considerable degree upon the condition of the gut, which bruises more readily when greatly distended, especially in neglected cases. It is interesting to note that bruising of the bowel, if in any way extensive, although without any apparent breach of surface on the peritoneal aspect, is almost invariably associated with bleeding into the intestinal canal, a fact conclusively demonstrated, in many cases, by the characteristic appearances of the first motion passed after the relief of the stricture, which nearly always contains altered blood. It may, in fact, be accepted without reserve, that attempts at reduction by manipulation produce some bruising of the bowel in the great majority of cases of strangulated hernia. At the same time, it may be fairly admitted that as a rule, unless great carelessness has been used, no permanent harm results. Taxis, however, should not be regarded, as it seems by some people, as a plan of treatment, which, if it fails to reduce the rupture, at least can do no harm. This last remark must not be taken to imply any objection to the proper practice of this method, but merely as a warning against its use carelessly and without due regard to possible evils which may under certain conditions result.

2. *Laceration of the bowel.*—This may, of course, involve the whole thickness of the intestinal wall or only one or more of its coats ; the former is naturally the most serious since it allows of the escape of faeces into the sac. The latter condition may vary in degree from an almost imperceptible crack in the

peritoneum to a laceration in the peritoneal and muscular coats inches in length, in which case the mucous coat protrudes, hernia-like, through the opening in the muscular wall. Whether the laceration is partial or complete the treatment is identical. The edges of the wound must be brought together with Lembert sutures, care being taken that the end stitches—if the lesion is of any extent—are placed a short distance beyond the extremities of the rent. When the gut is too tense to allow of approximation of the peritoneal surface it should, if necessary, be emptied in the way I have described in the first of the cases which form the text of this lecture. However small the crack in the peritoneum is, even if it be hardly perceptible to the eye, a single suture should be passed across it. If the condition of the patient in cases of partial laceration is so desperate that the delay entailed by the suturing process is not justifiable the gut should be cleansed and returned into the abdomen, an unperforated drainage tube of large calibre being left lying in the canal in the way I have recommended in a lecture published in *The Lancet* in 1890.

A point of great interest to which sufficient attention has not, I think, of late been paid, arises here with reference to the situation at which laceration from injury occurs in these cases. There appears to be an idea, which is traditional and supported by the teaching of the schools now, that the tear produced by injury in the gut of a strangulated hernia takes place *at the seat of stricture* in consequence of the way in which the sharp edges of the constricting tissues, as it were, cut into the distended bowel when pressure is exerted upon it.

Now I have seen several cases myself, in which a rent in the gut was undoubtedly produced by taxis, and in two of these the lesion was *not at the point of constriction, but on the prominent bulging and most distended portion of the bowel*. Both of these cases were recent, and in each the rent was in the long axis of the gut. The same result followed in some experiments made by me on the cadaver, artificial strangulation in two cases of old herniae having been produced by inflating the bowel from the abdomen and forming a stricture by ligaturing the neck of the sac together with its contents. The hernia was in one instance then violently crushed and in the other struck sharply with a stick ; in both the laceration occurred on the prominent part of the strangulated knuckle and in the long axis of the gut. On consideration, this result, so far as the situation of the injury is concerned, is, I think, precisely what should be expected in recent cases, for in such the rent begins in the peritoneum, which under pressure naturally gives way at the weakest point (that is to say,

where it is most thinned and stretched by distension). A sudden blow, therefore, or prolonged hard pressure would, of a matter of course, lacerate the peritoneum in the part most stretched and thin—i. e., over the end of the distended knuckle rather than at the seat of constriction, where not only is it unstretched, but where it is actually supported by the surrounding parts.

In cases far advanced and neglected the state of affairs is altogether different, because in them the gut at the seat of stricture is indented by the edge of the constricting tissues, partially eaten through by ulceration from within, or perhaps gangrenous and on the point of giving way. Then the weakest point is at the strictured part, and very little force may be necessary to complete the perforation which has already commenced. It is, I presume, in connection with cases of this latter kind that the traditional teaching has been fostered, for in recent cases of strangulation it certainly does not apply.

3. Rupture of adhesions in the sac.—The tearing of recent adhesions during attempts at reduction by manipulation need not have any serious result, but free haemorrhage into the sac may thus be produced so as to fill it completely with blood, although no serious lesion may be apparent. In old irreducible herniae, in which band-like adhesions sometimes exist between the bowel and the sac wall or between different parts of the bowel itself, no harmful results need follow if the adhesions themselves give way, but if, as may happen, an adhesion brings away some of the intestinal peritoneum with it, a partial laceration of the gut results, which is, if at all extensive, a serious condition, especially if the case has been neglected and operation long deferred.

4. Rupture of the sac.—This, although a recognized injury and classed as one of the modifications of the reduction *en masse*, must be a very rare sequence of taxis, as the amount of force required to tear the sac is very great and would hardly be intentionally applied. Bruising of the sac is, however, common and I have seen a portion of its wall torn away with an omental adhesion; this, however, is not a rupture in the sense under discussion—i. e., a splitting of the sac wall from sudden or gradual pressure. In the post mortem room I have not been able in artificially strangulated herniae to rupture the sac without also bursting the gut. Rupture of the sac is therefore probably too rare to be other than a curiosity; indeed Sir Astley Cooper, after his large experience, says that it "scarcely ever" occurs from any cause. Formerly spontaneous rupture of the sac was also a recognized condition, but actual evidence of its existence seems wanting, or at all events is not convincing.

5. Hæmatocèle.—A good example of this accident is afforded by Case 2, described in this lecture. After what I have said concerning the difficulty in causing rupture of a hernial sac it may at first sight seem strange that the sac of a hydrocele should give way so easily. There is nothing inconsistent, however, in this, for it must be borne in mind that the sacs of hydrocele sometimes undergo pathological changes which result in softening and thinning, so that they become weak in parts.

6. Hæmatoma from rupture of a large vein or veins outside the sac.—Enormous blood extravasation may be thus produced and occasionally upon the application of comparatively slight force, especially in elderly people. I once had an opportunity of seeing a large blood swelling involving the scrotum and groin, which were nearly black from discolouration, said to have followed upon nothing more violent than the manipulation necessary for the adjustment of a truss to an easily reducible hernia in a subject nearly eighty years old.

7. Reduction "en bloc"—i. e., the reduction of sac, together with its contents, the strangulation being therefore unrelieved.—The only point to which I need here call attention in this respect is the singularly small amount of force which sometimes seems necessary to produce this accident. I have personally seen only one case, and that was not in my own practice. The hernial tumor seemed to disappear almost the moment the hand was laid upon it and certainly before there was time for the application of any methodical violence. So much was this the fact that I cannot help feeling that there must be in such a case some kind of spontaneous action from above which contributes to the reduction. Is it possible that extreme irregular spasmodic attempts at peristalsis may act in this way?

It is only fitting that such an ominous list of casualties, which are not only possible, but actually occur in practice as the result of the use of taxis, should be followed by some indication as to when and how the reduction of an irreducible hernia by manipulation may be attempted without risk. The relative safety of this plan of treatment is dependent on three conditions. (1) The manner in which the taxis is applied; (2) the period during which the manipulation is persisted in; and (3) the state of the hernia.

1. The mode of applying taxis.—This may appear such a purely elementary point as to render its consideration hardly justifiable outside the pages of a student's text book. It is nevertheless true that practitioners, otherwise intelligent and trustworthy, do at times manipulate a hernia in the manner best calculated to cause injury to the contents of the sac,

whilst it affords the least possible chance of effecting reduction. I do not propose to occupy time now with a description of the method by which the taxis may be applied safely and with a fair prospect of success, as it can be more usefully learnt from practical demonstration at the bedside, but some of the details of the process are so important and essential that they require a passing notice. The details referred to are as follows : (a) All manipulations should be conducted only with thoroughly warm hands ; (b) the neck of the hernia should be firmly supported by one hand whilst the other manipulates the body of the tumor. (c) In using the fingers all pressure from the finger-ends should be made by *the front of the digital pad and never by the actual tips.* (d) The pressure necessary in the manipulations should be gentle, firm and regular, not forcible, unsteady and spasmoidic. The necessity for warm hands, for the support afforded to the neck of the hernia, and for the avoidance of the use of the actual finger-tips, is, I cannot help feeling, not so universally acknowledged as it certainly should be, for I have more than once seen attempts made at the reduction of a rupture by grasping the body of the tumor with hands almost blue with cold, the neck of the hernia being left entirely unsupported, and then with a punching and rolling movement, during which the finger-tips have been deeply pressed into the parts, the force has been gradually increased until further persistence in the attempt has been rendered impracticable by the protests of the patient. Where injury is possible it is from some such faulty plan as this that it is most likely to result. The cold hands excite every resistance in the way of muscular action ; the want of support to the neck of the hernia makes its reduction very unlikely by allowing the gut to bulge over the margins of the constricting ring, and, beyond this, in neglected or longstanding cases, when the bowel has commenced to ulcerate from within, the pressure of the sharp edges of the stricture acts at a great advantage in further injuring and perhaps bursting the thinned and weakened intestinal walls. Finally the sharply indenting finger-tips are admirably adapted for causing an unnecessary amount of bruising and possibly laceration of the gut.

2. The time which should be occupied in taxis.—Judging from my own experience, and from what I have seen in the practice of others, five minutes should be taken as the outside limit during which manipulation of a hernia in cases of apparent strangulation or when impulse on coughing is absent may be with safety persisted in, no matter how gently it is applied. In unstrangulated cases the same time should always be considered as sufficient, for, although no actual harm need result, if the time be ex-

tended it may very easily produce it; moreover, if success is not attained by the end of five minutes it is very unlikely to result at all, and further attempts are practically useless.

3. The condition of the hernia.—When properly applied and with the precautions just mentioned taxis may be used with safety—(a) in all cases in which the true hernial impulse is present, provided always that there is neither any marked tenderness nor inflammation in the sac or its contents, when its employment would, of course, be entirely negatived ; (b) in very recent cases of strangulation where the tension is not extreme. This latter is a recognized principle and is therefore worthy of respect, but I very much doubt whether it is possible, excepting perhaps in infants, to reduce by manipulation any rupture in which the hernial impulse is not present. For myself at least I must admit that I have never been able to return with any reasonable application of force a hernia in which I could detect no impulse. This impulse, it is true, may have sometimes been slight, but it was present all the same in the cases where reduction was possible, although it must be admitted that I could not always demonstrate it to my house surgeons in the hospital patients. A large distended hernia universally resonant should be treated with more than usual gentleness, for in such cases the bowel is far more liable to injury than in any other kind, especially if adhesions happen to exist in the sac. Hernial tumors dull on percussion, with omental or fluid contents, may be manipulated with greater freedom without much risk of damage being done, but in these reduction is entirely out of the question in the absence of impulse, the utility therefore of persistence in the attempts at all under these circumstances is not plain. Every case of apparently strangulated hernia must necessarily be treated upon its individual merits, but, for my own part, I am sure that, as a general principle, it is better in herniae which are obviously strangulated and entirely without impulse, to perform herniotomy at once rather than make attempts at reduction by manipulation, because I have no doubt whatever that early herniotomy in fairly competent hands is infinitely less hazardous than an unwise persistence in fruitless attempts at reduction by taxis. If due regard be paid to the patient's welfare, one thing at least is certain —viz., that a strangulated hernia which has once been subjected to taxis should be operated upon at once, and no further manipulation used until after the tumor has been explored and the stricture freely divided.

It must not be imagined that all risk of lacerating the bowel during attempts at its reduction necessarily ends after the sac has been laid open in herniotomy,

or indeed in every case after the stricture has been divided, for although to the best of my knowledge the accident has not occurred under these circumstances in my practice, I have been present at an operation in which a surgeon of experience certainly did produce a laceration in the peritoneal coat of the bowel, whilst attempting to reduce it after the division of the stricture which obviously gave rise to the strangulation. This difficulty sometimes experienced in reducing the hernia after the stricture has been cut is undoubtedly as often as not due to the division being not sufficiently free, the little nick so commonly recommended being too slight for securing the necessary relaxation of the constricting band. I am sure, from my own observation, that harm is more often likely to arise from too slight a division of the stricture than from one which is too free. Free division of the parts about the neck of the hernia as a rule entirely obviates any chance of injury to the gut, whilst the possible anatomical dangers entailed in this free incision have been, I have no hesitation in saying, unduly exaggerated.

Although I make a practice of dividing the stricture freely, I have never had the slightest cause to regret it, and certainly have never seen any haemorrhage which has given the least anxiety under these circumstances. The only case in which I have had any trouble whatever on account of bleeding after herniotomy was a strangulated umbilical hernia, in which alarming haemorrhage took place into the abdominal cavity from a torn omental vein. This vessel was almost certainly burst by the force which was necessary for the return of the hernia through a ring which had been only slightly divided; had the division been altogether more free the hernia could have been reduced without any force and the vessel would, I believe, have undoubtedly remained intact.

I now come to a point which is especially interesting in connection with a further difficulty which occasionally arises in the reduction of a hernia, even after the stricture has been freely divided. At first sight it is a singular fact that any difficulty should occur at all under these conditions, still it is quite certain that it is sometimes met with. For instance, in a case of inguinal hernia under my own care I was unable, after repeated division of the stricture, to reduce the intestine, although on passing the finger, as is my habit, through the canal into the abdominal cavity, I could feel nothing in any way constricting the bowel. The only noticeable thing to be felt was a loose membranous fold which, springing from the outer wall of the canal, lay quite flaccid upon the gut and allowed my finger to pass by it with perfect ease. Whilst I was attempting to return the bowel, the end of one finger being placed on it just below this fold,

I noticed that as the gut was pushed against the flaccid flap the latter seemed to grip the bowel after the manner of a sling. I therefore divided the fold, and then returned the hernia without the least trouble. Here, then, the obstacle to reduction was clearly this loose sling-like fold. The existence of membranous flaps like this and the manner in which they sometimes resist the return of the gut in operation for strangulated hernia have not of late received the attention they merit. Bands and flaps of this kind, which are not very rare, should invariably be divided whether they seem to compress the bowel or not, for if they do not actually prevent reduction it will be much more easily effected after their division. The history and mode of formation of these interesting folds may be conveniently reserved for consideration in another lecture.—*Lancet*, Aug. 20, 1892.

ELASTIC CONSTRICITION AS A HÄMOSTATIC MEASURE.

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Dangers attending Elastic Compression of a Limb.

—Compression of a limb by an elastic bandage, as a preliminary step to elastic constriction, secures for the tissues at the seat of injury or the field of operation perfect ischaemia, but is attended by two sources of danger:

1. When resorted to in the treatment of a recent injury or an infective inflammation, it might force pathogenic microbes from the wound or the seat of inflammation into the general circulation, thus adding a general to a local infection, with all the additional risks incident to such a condition.

2. In operations for malignant disease, carcinoma or sarcoma, it might force tumor-cells into the surrounding tissues, or through the lymphatic or blood vessels into the general circulation, causing thus regional or general dissemination of the disease. These two sources of danger are not imaginary but real, and every surgeon with considerable experience can recall instances where elastic compression could be made answerable for the diffusion of an inflammatory process or the dissemination of a malignant tumor. Fortunately, Lister's experiments on the horse have demonstrated that, for all practical purposes, bloodless operations can be made without the use of the elastic bandage by simply placing the limb in a vertical position for a few minutes prior to the application of the constrictor.

Diminution of Blood-Supply to the Limb by Gravitation.—The influence of the force of gravitation on

the supply of a limb becomes apparent by placing the arm in different positions. If one of the upper extremities is allowed to hang by the side of the body, and the muscles are fully relaxed, the veins become turgid, the capillaries distended, and the volume and force of the radial pulse markedly increased, and a sense of fullness and weight is experienced. If the arm is now elevated and held in the vertical position, within a few minutes the cyanosed appearance of the skin disappears and gives way to pallor, the overdistended veins collapse and are emptied of their contents, the radial pulse loses much of its volume and force, and the sense of weight and fullness is promptly relieved. If the limb is maintained in this position for five minutes, it is emptied of blood sufficiently to render operations, for all practical purposes, bloodless at any point below the elastic constriction. If an anaesthetic is used, elevation of the limb and the application of the elastic constrictor should not be done before the patient is thoroughly under the influence of the anaesthetic, as muscular relaxation is a material aid in securing a comparatively bloodless condition of the limb.

Form and Application of Constrictor.—Many surgeons have been in the habit of using a small solid rubber cord or a rubber tube of small size as an elastic tourniquet. Both of these forms of elastic constrictor are objectionable, as in either instance linear constriction is made, which particularly if the force employed be excessive as is so often the case, is so liable to cause temporary or permanent damage of some of the important tissues interposed between the skin and the underlying unyielding bone. The compression should include a ring at least two inches wide, in order to distribute the pressure over a larger area, in which event important structures are more likely to escape injury.

The best instrument for elastic constriction is a strong band of rubber at least an inch in width, of which at least two turns are applied side by side. In the absence of such a constrictor a soft rubber tube half an inch or more in diameter, an ordinary rubber bandage, or an elastic suspender should be used. As soon as the limb has been drained of its blood to the requisite extent by position, the constrictor is applied with sufficient firmness to interrupt at once both the arterial and the venous circulation. Simple as this advice may sound, it is nevertheless a fact that frequent mistakes are made in applying the constrictor properly. It is of the utmost importance that the pressure should first be made on the side of the limb occupied by the principal blood-vessels. If pressure is made first on the opposite side of the limb, the superficial veins are constricted first, and before the arterial circulation is interrupted, the limb presents a

cyanotic appearance caused by an intense passive venous stasis. If, on the other hand, the elastic pressure is applied in such a manner as to arrest the principal arterial blood-supply first, venous return in the superficial veins is not interfered with until the circular constriction is completed, and the limb below the constriction is then in a comparatively bloodless condition, and remains so after the application of the constrictor. Some tact and experience are necessary in regulating the force required to interrupt quickly and completely the arterial and venous circulation. Less force is required, of course, when the main blood-vessels are near the surface and close to a bone than when a thick layer of muscles is interposed between skin and blood-vessels and the underlying bone. Pressure beyond the required degree, especially if continued for an hour or more, is liable to result in injury of muscles and nerves, and should be carefully avoided. Instead of using the chain or tying the constrictor in a knot, it is better after encircling the limb at least twice to cross the constrictor and fasten it between the blades of a heavy haemostatic forceps. A well-recognized disadvantage of elastic constriction as a haemostatic measure is *increased parenchymatous hemorrhage*.

The profuse capillary oozing which so often follows the removal of the elastic constrictor, is undoubtedly, at least in part, due to a temporary vaso-motor paresis caused by the constriction. This result is obviated most successfully by keeping the limb in an elevated position at the time the constrictor is removed, and by maintaining this position for at least six hours. The intravascular tension is reduced to a minimum by elevation of the limb, and this condition is most conducive to the formation of a minute thrombus in each of the small vessels—capillaries, arteries, and veins—divided during the operation. Another exceedingly useful resource in diminishing unnecessary loss of blood, after all visible vessels have been ligated and the constrictor has been removed, consists in making firm pressure against the wounded surface. This is most effectually done by using a moist compress of gauze large enough to cover the whole surface, which is firmly held against the wound with one or both hands. After an amputation, for instance, all the principal vessels should be sought for and tied before the constrictor is removed, and the limb held in a vertical position. A compress of moist gauze is then placed against the wound surface, the flaps brought over it, and firm compression made over the end of the stump with both hands for at least five minutes. If the capillary oozing does not yield to this treatment, the wound should be irrigated with sterilized water at a temperature of 110° F., which makes a delicate white film on the surface, and

has a very prompt effect in definitely arresting the bleeding. In obstinate cases the addition to these expedients of an application of peroxide of hydrogen serves an excellent haemostatic purpose, and does not interfere with primary union of the wound.

Other complications arising directly from elastic constriction are:

Temporary Loss of Muscular Power and Nerve Paralysis.—These consequences undoubtedly are often the direct outcome of a faulty use of the constrictor. The experiments made by me show conclusively that firm constriction, continued for several hours, almost invariably results in loss of function of the limb, which continues for several days or weeks. In these instances the disability was undoubtedly due to injury of the constricted muscles. If in the use of the constrictor more force is used than is necessary to interrupt the circulation, and particularly if linear pressure is made, injury of the muscles exposed to this undue pressure is very likely to be produced. The same can be said of injury to the nerves from the same cause. Two cases of nerve paralysis resulting from elastic constriction have occurred in my own practice.

For the purpose of preventing injurious pressure on nerves from elastic constriction, it is necessary to tie only with sufficient firmness to interrupt the arterial and venous circulation, and the pressure should not be linear, but distributed over a wide area, a ring at least one inch or two in width. The last requirement is best attained by using a wide band, or if an elastic tube or cord is used, the limb should be encircled several times, each turn drawn with uniform force and arranged in such a manner as to compress with equal firmness a wide circle, thus exerting the same effect on the tissues underneath as pressure made by a wide band. If for any reason the constriction cannot be made at a point where the principal nerves are well protected by a thick layer of muscular tissue, a thick compress of gauze should be placed between the constrictor and the limb, in order to protect the nerves against injurious pressure.

Necrobiosis and Gangrene following Elastic Constriction.—Experimental research has shown that an ischaemic condition and elastic constriction for two hours or more, are liable to produce an unfavorable influence on the karyokinetic processes in the tissues deprived of blood for this length of time. This is a sufficient proof that prolonged constriction retards the healing process. Necrobiosis, slow healing, and necrosis of margins of the wound, are some of the remote consequences which follow prolonged constriction of a limb.

In the use of Esmarch's constrictor in arresting hemorrhage that threatens life, it is practically not

necessary to distinguish between venous and arterial hemorrhage. It was the consensus of opinion of the members of the military section of the last International Medical Congress in Berlin, that it is no longer wise nor practical to differentiate between arterial and venous hemorrhage, in rendering the first aid to the wounded on the battle-field, or in a case of accidental hemorrhage; that the one point that must be taught the soldier, the breakman, and the conductor, is that if hemorrhage is so profuse as to threaten life before medical aid can be summoned, it should be at once arrested by elastic constriction,—by a suspender if nothing else is at hand,—applied invariably on the proximal side of the seat of injury. The constriction must be made with sufficient firmness to arrest completely both the arterial and venous circulation, as has been repeatedly insisted upon above. By applying the constrictor only with sufficient firmness to diminish the arterial circulation the venous hemorrhage is increased. It is by overloading the tissues with venous blood by imperfect constriction that gangrene is invited and venous hemorrhage increased. *Internat. Medic. Magazine.*

CIRCOLO-LATERAL ENTERORRHAPHY.

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By circulo-lateral enterorrhaphy is meant an operation that approximates the bowel ends at the expense of the convexity of the divided ends without restricting the caliber of the gut at the point of union. In all operations heretofore, in which the intestines were brought end to end, all methods of suture would cause a restricting of the bowels at the point of union to such an extent that the caliber was incompetent for physiological purposes. There was no method, or suture, or end to end approximation that was safe and reliable.

Wherever the bowels are brought together end to end, there was usually a cutting off of the blood supply to such an extent that sloughing, in the majority of cases, would occur, but in the operation herewith proposed, constricting of the caliber is an impossibility and sloughing is almost unknown. There has been a constant desire on the part of the profession, since anastomosis has been perfected into a justifiable procedure, to do away with all anastomotic devices; but, so far, all efforts have proven useless. By anastomosis, the bowel can so easily be restored to its integrity, and with such little danger that any other procedure, as a substitute, would not be attempted. Nor should the surgeon attempt it because of the legal responsibility.

Anastomosis is a procedure that is not only justifiable, but that can never easily be done away with.

There are certain conditions of the bowel in which resection is not to be thought of, and to render the bowel competent, a collateral circulation must be established ; and to do this, there is no means that is so justifiable, available and easy as that of anastomosis. When we have a stenotic condition of the intestines, it is always preferable to flex the bowel and approximate laterally by means of anastomotic catgut plates rather than resect and restore the bowel to its integrity by end to end approximation. Besides, there are stenotic conditions of the stomach and bowels that result from malignant growth and tubercular deposits, necessitating lateral approximation, without resection, by means of anastomotic devices. Where a resection must be made, we can now approximate the intestines end to end in the way proposed as to make the caliber any size we choose and render the dangers from perforation nil. This is done as follows :

After the resection, the mesentery of the resected gut is left in situ, and the ends of the intestines are brought together by intralooped sutures that are tied on the inside of the bowel. This suture is first made on one side and then on the other of the mesentery. They are continued in interrupted loops until the bowel on each side is approximated to about one-half, then to increase the caliber of the gut an incision is made in the convexity of the approximated ends to any extent desirable or necessary to make the gut caliber large enough for all physiological purposes. After this incision is made, the line of loop sutures is continued until the two slits in the bowel are approximated just as the ends of the bowel. The last suture is tied and then pushed inside of the gut by means of a needle or small pair of forceps. After this, a continued or interrupted outside suture is rapidly carried around the line of union approximating the serous surfaces beyond the needle openings made by the internal loop sutures. The bowel is lapped in the mesentery which is held by two or three interrupted sutures. The mesentery becomes engrafted upon the bowel, doubly protecting the line of suture and forever preventing intussusception or invagination.

This operation is the result of a series of experiments made with the view of doing away with all foreign material for the restoration of intestinal continuity. After many failures, my brother, Dr. W. E. B. Davis, suggested and demonstrated upon the dog that this method was not only feasible, but easy of execution, reliable and safe.

In gastro-enterostomy, the end of the bowel may be brought in direct contact with the stomach by these intra-loop sutures, in such a way that the gastro-intestinal opening can be made any size desirable.

In gastro-enterostomy, if the intestine is very small, we only have to slit up the intestine and bring the lateral sides in union with the stomach which will make the fistula competent and safe. Instead of turning in the ends of the bowel and doing anastomosis by lateral coaptation, we make an incision in the stomach sufficiently long for all purposes, and then slit up the convexity of the bowel to such an extent as to make it equal the size of the incision in the stomach.

The approximation in an entro-colostomy is made just as a gastro-enterostomy. In all operations of circulo-lateral coaptation, the mesentery, if possible, should be utilized for protecting the line of suture. Whenever this is done, the mesentery is so shortened as to prevent the invagination and volvulus of the bowel at this point.

The advantage of this operation is that the approximation is made without the use of foreign devices and is perfectly safe and reliable.—*Alabama Med. Surg. Age.*

THE PRINCIPLES OF TREATMENT IN GONORRHOEA.

By PROF. NEISSE, Breslau.

At the late meeting of the International Dermatological Congress, the author formulated the rules for the treatment of gonorrhœa in the following conclusions :

I. The basis of all prophylactic and therapeutic measures in this disease is the recognition of the gonococcus as the cause of gonorrhœal infection. It is necessary in every stage of the affection to determine the presence and seat of the lesion. The diagnosis is impossible in many acute cases and in all subacute and chronic cases without microscopical examination of the secretion for gonococci; macroscopic inspection alone, especially in women, is perfectly worthless.

II. The dangers of gonorrhœa are :

1st. That the gonorrhœal virus and the lesions resulting therefrom may not remain confined to the mucous area originally infected. In men the posterior urethra—so inaccessible to therapeutic measures—the seminal ducts and epididymis may be attacked, and prostatic and vesical complications may arise. In females the uterus, tubes, ovaries and peritoneum may be affected.

2nd. That during the later stages the gonorrhœal virus extends to the deeper epithelial layers.

Owing to this extension in both directions, both over the surface as well as into the deeper parts, it comes about that the virus may remain for months or years in places difficult of access or inaccessible ;

that is, may form a chronic source of infection. It is only during the first stages that the virus is found in accessible places (in males the anterior urethra, in females the urethra and cervix) and in the superficial layers of epithelium, so that the disease is easy to treat, even by the patient himself.

The aim of treatment in gonorrhœa should, therefore, be to prevent conversion of an anterior into a posterior urethritis and of an acute into a chronic urethritis. It should therefore be commenced as early as possible after infection.

III. Only medicaments should be employed which *a.* destroy gonococci; *b.* increase the inflammation as little as possible; *c.* have no injurious action upon the mucous membrane, such as solutions of nitrate of silver 1-4000 to 1-2000, ammonia sulpho-ichthyolate 1-100, sublimate 1-30,000 to 1-20,000.

Improper are remedies which are simply astringent on account of the danger of transporting the virus by the injection.

Dangerous in the early stages are caustic solutions in strong concentration on account of the development of strictures, also most of the mechanical methods of treatment, such as the endoscope, bougies, etc.

IV. The best anti-bacterial method of treatment in the early stages of gonorrhœa is frequent irrigation of the urethra, by means of which the folded mucous membrane can best be cleansed. In males irrigations can usually be replaced by injections with a large, well constructed syringe. In females mechanical methods (sponging out the urethra and cervix) are indicated, together with irrigation and injections. In the author's opinion the administration of internal remedies is unnecessary. General hygienic and dietetic regulations, as well as local antiphlogistic measures, are useful and should be carried out as much as possible.

V. In all not perfectly acute cases it must always be determined whether a posterior urethritis exists and whether gonococci are present in the secretion; only in the latter case is this early posterior urethritis to be treated by local measures.

VI. The duration of treatment is not to be estimated by the momentary success which often ensues very rapidly; it must usually be continued for a long time, although less energetically. The aim of our therapeutic efforts should be positive and not rapid results.

VII. The treatment of so-called chronic gonorrhœa in males and females must be based upon the decision of the question whether it is actually gonorrhœal infection or non gonorrhœal.

VIII. If in a male gonorrhœal virus is still present in the secretion of the anterior or posterior

urethra, its destruction is best accomplished by irrigation or Guyon's instillations. If the chronic gonorrhœa is no longer of gonorrhœal character the method of treatment will depend upon the pathologico-anatomical changes of the mucosa or submucosa. In the majority of cases the lesions are so slight that irrigations or instillations are all that is required. Deeper changes in the mucous membrane must be exactly localized by the sound, endoscope, etc., and require more energetic treatment (dilation, massage, caustics).

IX. The treatment of gonorrhœa in females is much more difficult than that in males. An estimate of the therapeutic effect can only be formed by repeated microscopical examination of the secretion. The treatment of recent urethral and cervical gonorrhœa should be instituted at as early a period as possible, and with more than ordinary vigor, for the reason that uterine, tubal, ovarian and peritoneal infection are liable to result which are cured, if at all, with great difficulty.

More attention should be paid to the frequent occurrence and therapeutics of rectal gonorrhœa, because this form of the disease seems to be the starting point of many chronic rectal ulcers.—*Internat. Klin. Rundschau*, Oct. 9, 1892.

HæMORRHAGE INTO BURSÆ.

BY DR. LUCY, PLYMOUTH, ENGLAND.

Hæmorrhages and sudden serous effusion into the cavities of bursæ have not received much notice or the attention they deserve. Hæmorrhage into a bursa is traumatic in origin, and may follow (*a*) contusion or (*b*) severe and sudden movement of a joint over which the bursa is situated. The sacs most liable to this injury are, in order of frequency, (1) the two pre-patellar, subcutaneous and sub-fascial; (2) that over the olecranon process; (3) that over the tuber ischii; and (4) the subacromial bursæ. The position of these over bony surfaces or "points," favor the production of this condition.

In support of these statements I append the following cases as typical of the two chief causes:

1. An old man, aged seventy, a month before coming under notice fell and struck his buttock. A swelling over the right tuber ischii quickly appeared which has remained the same size, the skin over it now being red and oedematous. On incision the tumor was seen to consist of a glistening cavity lined with blood clot, which was turned out and drainage established. It would not close so the bursa was excised, and the patient made a good recovery.

2. A coal-heaver, aged forty, when lifting a weight, felt a "click" in the right elbow, and found a soft swelling at the point of the elbow. This "hardened" on the way up to the London Hospital, and on admission I found a tense, painless swelling in the situation of the olecranon bursa, which on palpation was found to contain clot. The history here was so circumstantial that I regarded it as a case of hemorrhage into a bursa following exertion. In a similar manner a fall on, or the impact of a falling body on, the point of the shoulder causes the sub-acromial bursa to fill; subsequent crackling on active or passive movement has led to the diagnosis of "fractured anatomical neck," etc.

Signs and symptoms. The subject of haemorrhage is important because the signs accompanying the presence of blood in bursal sacs are those which would lead us to confidently expect pus, and I have seen many cases of enlarged bursæ treated by incision when the sole contents were blood in various states of change, or merely serum more or less blood-stained. Following a blow, fall, or severe strain, a swelling appears in the anatomical position of a bursa; this enlargement comes on rapidly—usually in a few minutes—and the patients tell you that the lump has been "the same size ever since the fall," etc., a most important point in the history. On palpation fluctuation is readily obtained with a certain amount of pain and tenderness, especially when caused by contusion; in a few days redness and œdema of the skin over and around the bursæ appear, and we have the classical cardinal signs of inflammation ("tumor, dolor, rubor, calor") present, but as we shall afterwards see, not pus but "cruor." The thermometer is here our best, though not an infallible aid. In haemorrhage pure and simple, although the signs of suppuration appear so unequivocal, we find the temperature rarely above normal. Relying on signs alone, I have seen many bursæ opened as abscesses, to find nothing but blood-clot or serum, with, in some cases, such as the pre-patellar bursa, thin pus in the subcutaneous, but blood-clot only in the thick-walled subfascial cavity, analogous to the so-called "reflex abscesses" outside a joint the seat of commencing disease. It is in these cases that ecchymosis is not present; when it is no doubt exists as to what composes the tumor contents.

Crackling or rubbing is a sign especially marked on palpating a sub-acromial bursa filled with blood-clot. The so-called "melon-seed bodies," so often to be demonstrated by palpation at the bottom of such bursæ as the olecranon and pre-patella, are, I take it, evidences of former haemorrhage, being composed of condensed decolorized (more or less) fibrin, either free in the cavity or moored by a longer or shorter pedicle to the interior; occasionally they are fixed and

sessile. My object in calling attention to these points is to prevent bursæ being needlessly opened, for tedious suppuration almost invariably follows and the bursa has to be excised.

Treatment. The limb should be immobilized on a splint, an ice-bag or evaporating lotion applied, and rest of the joint ensured for several weeks if the patient be anaemic or tubercular, in order to prevent suppuration. The swelling slowly subsides, leaving "melon-seed bodies" behind, and these seem to be the starting point of the hemorrhage following exertion. That haemorrhage into bursæ is more common than it is supposed, is proved by finding broken-down clot in the contents of abscesses caused by the bursting of a suppurating bursa into the subcutaneous tissues —e. g., round the knee-joint.—*Lancet*.

RADICAL TREATMENT OF HYDROCELE.

By THOMAS S. K. MORTON, M.D.

In an instructive paper the author presents the following conclusions:

1. Simple tapping, the injection of tincture of iodine or carbolic acid, and aseptic incision (with or without excision of a portion of the sac) are alone employed to any extent in the modern radical treatment of hydrocele.

2. Although other injection materials—notably bichloride of mercury solution and iodoform—have been commended, yet clinical proofs of their efficiency are lacking.

3. Simple tapping, under full antisepsis, may be relied upon to relieve any hydrocele and will cure a small percentage of cases.

4. The injection of moderate amounts of tincture of iodine (3 j to 3 iv) or carbolic acid (m. xx to 3 j) will cure about 85 per cent. of the simplest forms of hydrocele. These two agents appear at present to stand almost upon an equality as regards percentage of cures and complications, but the acid has the advantages of not giving rise to pain or shock and produces a much shorter period of disability; it appears also to be steadily gaining in popularity, and has cured many cases where the previous use of iodine had failed.

5. Cocaine should not be employed to prevent the pain incident to injecting iodine, on account of its erratic and occasionally fatal constitutional effects.

6. The following conditions should prohibit any attempt at radical cure by irritant injections :

- a. Disease of the testicle or cord.
- b. Hydrocele complicated by hernia or the presence of a hernial sac, or where there is any doubt as to the relations of the hydrocele sac.
- c. The presence of multiple cysts.

- d. Cloudiness of contained fluid.
 - e. Thickening or tuberculosis of the cyst walls.
 - f. Presence of considerable pain.
 - g. presence of syphilis, tuberculosis or any depraved physical condition. Potassium iodide will cure most hydroceles of syphilitic origin.
 - h. Where communication with the abdominal cavity cannot be excluded.
 - i. The failure of previous attempts to cure in this manner.
 - j. Great size of cyst.
 - k. Extreme old age or where the cyst is developed in childhood.
7. A considerable time should be allowed to pass after reaccumulation of fluid following injection before undertaking other treatment, as the effusion is apt to be inflammatory and to disappear in time.
8. While many complications and even deaths resulting from attempted radical cure by the injection method are on record, yet most of these can be traced to violation of the above mentioned contraindications, to the employment of too large a quantity of the irritant, to the neglect of antisepsis, and to injecting into cellular tissue.
9. The method of tapping and injection is the method *par excellence* for those not familiar with the technique of surgery.
10. Permanent cure may be anticipated with almost absolute certainty, where the operation of incision and packing of the sac is performed. Failures under the Volkmann method can often be traced to :
- a. Overlooking small secondary cysts or cartilage-like bodies, or failures to recognize disease of the testicle or cord.
 - b. Attempting to secure primary union.
 - c. Too early removal of the drain tube, where that method of drainage has been made use of.
 - d. Too small an incision.
11. The substitution of gauze packing for the drain tube in Volkmann's operation will probably prevent most of the complications that have been reported, and secure, with proper attention to minute secondary cysts, a uniformly radical and safe cure.
12. The death rate from simple incision and drainage is no greater than is that from injection of iodine. Sepsis and careless hemostasis are responsible for almost all complications and reported fatalities.
13. Excision of a portion of the sac—Bergmann's operation—is probably unnecessary and unjustifiable except where the tunic is exceedingly thickened or otherwise extensively diseased, as when containing calcareous patches or tubercular infiltration.
14. Incision of the sac may be performed under any of the conditions which contraindicate irritant injections except extreme youth, and certain constitutional conditions.

15. In double hydrocele both should never be injected at the same time, but double incision may be done when the local and general conditions are favorable.

16. A radical cure can only be promised when incision is employed,—*Philadelphia Polyclinic*.

THE SURGICAL TREATMENT OF RECTAL CANCER.

By DR. G. B. SCHMIDT.

In a paper based upon the surgical material at the *Heidelberg Clinic*, the author estimates the value of the various operative methods employed in rectal cancer. In some of the cases the growth was removed by the perineal method, in others by the sacral, while in still others conservative procedures were resorted to, such as curetting, cauterization, or establishment of an artificial anus by lumbar colotomy. Circular incision around the anus and separation of the neoplasm from the underlying parts according to Lisfrank's method, was practiced in cases where the cancer had commenced in the neighborhood of the anus or had invaded the parts to the outside of the latter. If the neoplasm was situated higher up and was freely movable, Dieffenbach's incision was employed in the anterior and posterior raphe. Subsequently, the latter procedure was replaced by Kraske's method. As regards the parasacral procedure, the author states that the after-treatment presents greater difficulties, and that the application of the circular suture of the intestine in the depths of the large wound of the soft parts is laborious and can be accomplished less perfectly than with the other methods.

The mortality in perineal operations was 3.1 per cent.; among thirty-six patients operated upon by the sacral method, seven died, a mortality of 19.4 per cent. The total mortality was 11.7 per cent. As regards the ultimate results, the duration of life in cases operated upon by the perineal method was on the average two years, at the most four years after the operation. Of thirty patients operated upon during the last six years, ten are still alive, six of which have lived more than two years. Of the cases operated upon by the sacral method, 31 per cent. died during the last six years, partly in consequence of local recurrences and partly from metastases; 62 per cent. are still living, of which eighteen patients had survived a period of two years.

The author finds that with reference to the preservation of continence of feces the sacral method of resection of the diseased gut and circular suture gives the best results. Relative continence existed after all perineal operations.—*Beitr. Zur Klinischen Chirurgie, Bd. IX, Hft. 2.*

INJURIES OF THE LARGER VENOUS TRUNKS.

By DR. NIEDERGALL.

Since the introduction of antisepsis, ligation of the large veins is no longer followed by suppuration, extensive thrombosis, infection of venous thrombi and pyaemia. The methods employed for partial injury of the venous coat, which aim to preserve the lumen of the vessel by lateral suture of the wounded vein, have latterly given much better results than formerly. These methods which are discussed by the author in extenso, comprise compression by tampons, lateral ligature, suture of the vein, and finally lateral clamping of the vessel, the instrument being temporarily left in place.

The author thinks that in cases of small punctured wounds of the venous trunks with slight wounding of the soft parts compression by means of antiseptic tampons may give rise to healing of the venous wound with preservation of the lumen. In more extensive injuries compression is not advisable, inasmuch it is impossible to preserve the lumen; besides it cannot be relied upon to arrest the hemorrhage. But even in cases of small wounds this method will only prove successful if the wound remains aseptic and the walls of the vein are healthy. In the author's opinion, lateral ligature may sometimes effect healing of the wounded vein, with preservation of the lumen. This method cannot, however, be recommended without reservation, as it is not free from the danger of primary hemorrhage in consequence of slipping of the ligature—an accident which is the more likely to occur since by application of the ligature the vein is shortened in its longitudinal axis. The lateral ligature is more suitable where venous branches are wounded near the place where they empty into a main trunk; it is only indicated in small wounds of the veins and if the vessel walls are intact, for if the latter are friable or otherwise changed the sharp thread is apt to cut through the wall.

On the ground of his experiments, the author strongly recommends suture of the veins in cases of clean-cut, longitudinal and transverse wounds which are too extensive to permit of lateral ligature. Suture is free from the danger of hemorrhage, but to insure success by this method the walls of the veins must not have suffered a change of nutrition in consequence of contusion, disease, etc. In 45 cases the author obtained an excellent result by lateral application of clamps which were allowed to remain for twenty-four hours. He considers this method of great value in lateral injuries of the great venous trunks, and thinks that it has some advantage over the other procedures. Thus the lumen of the vessel is

only slightly encroached upon by the clamps, and in practising this method, it is not necessary to lay bare the vein, as must be done in application of the lateral ligature and suture. Pean's forceps are recommended as clamps, which should be removed at the end of twenty-four hours. The author has treated altogether 53 cases by the latter method.—*Deut. Zeitschr. f. Chirurgie, Bd. XXXIII, Hft. 6.*

SURGERY IN THE FUTURE.*

Address of Professor Paul Pry, Jr., to the Medical Society at the Annual Meeting, June 9, 1898.

Gentlemen:—I propose to bring to your notice to-day a remarkable result of the application of the principles of a scientific physiology to the development of the human race. But first I ask your indulgence for some brief introductory remarks.

You have all read, that in the latter portion of the nineteenth century, at, and following the introduction of antiseptic and aseptic methods, the surgeons of that date exhibited great boldness and no little skill in opening the greater cavities of the body to enable them to treat directly the conditions of the internal organs.

And many here present must have personal recollection of the fact, that, at a later date, my honored sire, noticing that his cures by abdominal section necessitated the reopening of the cavities at frequent intervals, conceived the brilliant idea of closing the wound of the original operation by buttons and button-holes, thus affording the professional attendant an opportunity at any future date to inspect the condition of the organs without the delay and trouble of parietal section.

It is hard for us to-day to realize the boldness required for devising and executing what is to us an every-day matter. As an instance of his accurate judgment, I point with pride to the fact that no better substitute has been found for the decalcified bone buttons he used in his first case, and if the carbolized catgut loops, which he then employed, have been supplanted by the button-holes worked by my patent button-hole machine, such a trifling modified technique should in no way be allowed to detract from the credit due to him for this great advance in surgical science.

Nearly forty per cent. of our population, who can at present walk into their doctor's office, and by simply unbuttoning their bellies, can get his advice upon the state of their livers or bowels, attest the immense value of the procedure due to his wise foresight and profound ability.

* From advanced sheets stolen by a detective reporter for the *de press*.—*Boston Medic. and Surg. Jour.*, Oct. 20, 1892.

One remark of this able man not long before his lamentable decease was : " My son, in making a button-up belly I have but restored an original feature of the race. The umbilicus, that persists still upon the human abdomen, is still known to the vulgar as ' belly button,' and is evidently a survival of the earlier row. Cannot this useful condition be restored by breeding and natural selection ? "

Acting upon this hint I have long hoped to be able to follow up the investigation which he suggested.

Early this year, a young couple, about to be married, and who both required the removal of their appendices vermiciformes, came to my clinic and I performed laparotomy as usual. The cost of the operations proved a serious obstacle to their projected marriage, and gave me an unexpected opportunity. As the result of my proposals it was agreed between us that they should be married by an antiseptic clergyman and take up their residence in my suite of sterilized glass chambers—both to remain until conception was assured. After that was beyond doubt, the husband was allowed to go out and in under the strictest antiseptic precautions. Every possible care was taken to protect the lady from disturbing influences, and she remained in strict seclusion until confined.

A few days ago I had the pleasure of delivering her of a healthy, well-grown infant—female—which, to my great delight, presented in its anterior median line the artificially induced abdominal condition of the parents. From chin to labia majora a row of buttons and buttonholes extended. There was nothing remarkable about the labor except the fact that the infant was buttoned on to the placenta instead of being connected by a cord as usual. But as I fortunately had my belly-buttoner in my pocket, I had but little trouble from this source.

I am now about to present both the parents and child for your inspection ; but 'ere I do so, I must state one most wonderful instance of the strength of maternal impressions. Carefully as I thought I had secluded the mother from external influences, I made one serious omission. Her meals were served by a thoroughly sterilized page who wore the usual adornment of his class. To my astonishment and regret the buttons of the infant, instead of being animal tissue, are of the shiniest brass. I will now, with your permission, introduce my friends, Mr. and Mrs. Grimes, and their infant.

NOTE 1.—President Paul Pry, Sen., so affectionately spoken of by his eminent son in the above address, died at an advanced age some years since. The cause of death was heart failure following an operation to replace his cirrhotic liver with one from a healthy pig. Weak as he was, he detected the fatal error of limiting the transfer to a single organ; and as he died, grunted : " They should have gone the ' whole hog or none.' "

NOTE.—Mr. Grimes, the father of the interesting infant, whose genesis is stated above, is a lineal descendant of the Grimes who is the subject of a well-known poem of Albert G. Greene.

C. F. C.

THE TREATMENT OF BUBOES.

BY DR. T. SPIETSCHKA, Prague.

The measures for the treatment of buboes may be divided into the direct and indirect. The former consist in operative removal of the glands, the opening of glandular abscesses, or the introduction of medicaments into the gland ; the latter aim to effect absorption of the morbid material by application of external agents:

The latter would be the ideal method of treatment, but has proven useless in cases where the glands have gone to suppuration, although it may occasionally succeed if suppuration has not yet taken place. Zeiss says that it is seldom possible to prevent or arrest suppuration in buboes resulting from soft chancre, while Auspitz, as far back as 1873, expressed himself very unfavorably regarding the various internal and external remedies employed for the prevention of bubo.

In the clinic of Prof. Pick, at Prague, applications of ice and tincture of iodine have been long since discarded as useless or even injurious ; and resort was had to such measures, as rest in bed, administration of purgatives, cataplasms, and inunctions with blue ointment in cases where suppuration had not occurred. Since April, 1891, the treatment of suppurating buboes has consisted in entire removal of the affected parts, inasmuch as simple puncture, or aspiration of the pus was found inefficient. Other direct measures, such as injection of sublimate or carbolized solutions, emulsions of iodoform were tried, but soon rejected.

The operation as practiced in Prof. Pick's clinic, was quite simple; if the glands had undergone liquefaction all that was required was wide incision, thorough scraping of the wound cavity with the sharp curette and opening of sinuses and recesses. In cases where the large glandular tumors were firmly adherent to the neighboring parts or where a large amount of cicatricial tissue, resulting from previous incisions was present, the conditions for treatment were more difficult. It was necessary here to extirpate the entire diseased structures, and owing to the large amount of tissue to be removed and the proximity of the femoral vessels, the operation became much more difficult, and large defects which healed slowly were left. The operation was usually performed under chloroform anesthesia, unless in cases of small buboes, where cocaine was employed. The dressing consisted of iodoform gauze, sometimes of Peru balsam.

In 1890, one hundred and twelve cases of severe suppurating lymphadenitis inguinale were treated in Pick's hospital wards. Of these twenty-five were treated by indirect measures; the others by operation.

The duration of treatment was on the average forty-two days, and the results were excellent.

In 1891, Dr. E. Welander (*Archiv. f. Dermat. u. Syph.*) reported some experiments with an abortive method of treating buboes. In forty-one cases where suppuration had not occurred, he obtained excellent results from injections of a one per cent. solution of benzoate of mercury. He employed one gramme of the solution, injecting it all in one place, but generally in two places. Although among his cases there were eight in which distinct fluctuation was present, 30 patients (73 per cent.) were cured by this procedure alone.

After a successful trial Welander's method was adopted in Pick's clinic. Instead of the application of a moist sublimate dressing, renewed several times daily, as recommended by Welander, compresses moistened in solution of acetate of alumina were employed, which were better borne by the skin, requiring renewal only once daily or even on alternate days. It was soon found that the remedy could be utilized in a larger number of cases than had been stated by Welander. Larger quantities of the solution were also injected, from two or three or even four syringefuls, and the injections were sometimes repeated, the resulting abscess being evacuated by simple puncture with the bistoury.

The course of cases treated in this manner is usually as follows: At first the swelling becomes more painful; in most cases there is a rise of temperature on the same or following day, which subsides in two or three days, and seldom exceeds 39° C. During the first few days after injection the swelling appears more inflamed, it becomes larger and redder, and frequently fluctuation occurs in buboes which previously had not shown its presence. Puncture often gives vent to a few drops of pus. Subsequently the fluid expressed becomes clearer, the inflammatory appearances decrease, and thus we sometimes succeed in aborting a buboe. Frequently one injection will not suffice and two or three are required.

Often, however, the course of the case was different; the fluctuation appearing after the first injection failed to subside. Aspiration proved useless, because the cavity again filled up. Better results were obtained when the cavity was opened, so that the fluid could drain out constantly. For this purpose the deepest portion of the fluctuating swelling was incised with a bistoury to the extent of 1 cm., the contents evacuated, and the cavity irrigated with 1-1000 sublimate solution; a little iodoform gauze was introduced into the opening to prevent its closing too soon, and then a dressing of acetate of alumina was applied. The fluid discharged was usually thick, of dark-brown color, contained numerous necrotic masses, de-

generated blood cells, but few pus corpuscles. Although at first profuse, in a few days it became scantier and assumed a bloody-serous color. At every change of dressing, every second or third day, the cavity was well irrigated. It gradually diminished in size, the infiltration disappeared, and finally the opening closed.

This procedure was frequently employed with success in cases where fluctuation was already present before injection, if the skin was still of healthy character. It was also resorted to in cases where a cure could not be expected by this means alone, preparatory to operation, to render the wound aseptic, to substitute for excision of still indurated glands the simpler method of opening and curetting the abscess. In this way the operation was simplified in a large number of cases.

Among 62 cases treated at the clinic up to November, 1891, injection alone sufficed in 37.7 per cent. to effect a cure of the adenitis. In twelve the glandular abscess had to be punctured after injection. In sixteen, after use of the injections a wide incision with curetting of the cavity was necessary, so that in only eleven cases were more complicated operative procedures required.—*Prager Medicinische Wochensch.* No. 34, 1892.

The Treatment of Rodent Ulcer.—In an interesting article on rodent ulcer, Prof. Dubrenilh states that in the surgical treatment we have our choice between three measures: caustics, extensive excision, and curetting. The strong caustics, such as Vienna paste, destroy too much or too little, and are only adapted for circumscribed ulcers of patients who fear a bloody operation. In his opinion, wide excision is the best method, whenever it is possible, but is only indicated if the disease is not too extensive and if it is not seated upon the face. If, however, as is usually the case, the lesion is found upon the nose, in the vicinity of the eyelid, such an operation is only admissible where it runs a rapid and destructive course. In the benign cases, which are the most frequent, the author uses the curette, followed by cauterization with trichloracetic acid or chloride of zinc. By this method too much tissue is not destroyed and the scar is small. Recurrences, which are rare, may be treated in the same manner. In the worst cases the disease can be controlled by extirpating two or three nodules every year. The author observed as many recurrences after application of caustics as after excisions. Inasmuch as the disease does not threaten life, extensive operations, such as are employed in cancer, are contraindicated.—*Wien. Medizin. Presse*, No. 42, 1892.

Surgical Memoranda,

Excision of the Breast for Cancer.—Mr. W. Watson Cheyne, sums up as follows: "In all cases there should be free removal of the skin, especially over the tumor, very free indeed, if the skin is actually the seat of disease; complete removal of the breast bearing in mind its great extent, removal of the pectoral fascia coextensive with the breast and right on to the sternum, along with a thin layer of the muscle behind the tumor and the main part of the breast; removal of the fascia over the serratus magnus in the axillary region and of all glands and fat from the axilla, not by pulling out the glands, but by clean dissection; further, if the tumor is adherent to the pectoral muscle, removal of large strips of that muscle. This may seem a very extensive operation where the tumor is small, but the object of the operation is not to remove the tumor, but to rid the patient of her disease, and that can only be done by removing, as far as possible, all the probable seats of recurrence. The operation is fortunately one in which, if performed aseptically, the question of mortality does not come into play, and the results of this free removal seems to promise well. Although I have been brought up to deal more freely with these cases than used to be the fashion, my impression is that there has been an improvement as regards recurrences since. I began to act closely in accordance with the recent pathological researches. During the last two years, I have operated in this manner in over twenty cases, and recurrence has only as yet taken place in three instances, in one case being intra-thoracic, and in another in the form of a small nodule in the skin, over the angle of the scapula, three inches and a quarter away from my former incision in the skin—a striking instance of the necessity of free removal of the skin once it has become involved in the disease.—*The Lancet.* Aug. 13, 1892.

Vaginal Enucleation of Uterine Myomata.—Prof. H. Chrobak, in a monograph on this subject, reports forty-three cases operated upon by this method, with only one death. His conclusions are as follows:

1. Vaginal enucleation of uterine myomata is indicated in a certain series of cases; with this limitation it is far less dangerous than other operations for myoma.

2. This procedure is especially adapted in the early stages of cervical, submucous and also interstitial myomata, if the uterus is movable and can be easily drawn down.

3. To determine the seat of the tumor the uterus should be well dilated and the interior examined with the finger.

4. Contraindications to the operation are the presence of multiple tumors, or subserous seat of the myomata, as well as diseases of the adnexa.

5. Other contraindications are a long, hard cervix, incapable of dilatation, large size of the tumor, the presence of inflammations of the pelvic cellular tissue, peritoneum, etc.

6. Intra-uterine disintegration of the neoplasm should be carried out as completely as possible.

7. Excessively large myomata extending up to the umbilicus present disproportionate difficulties to enucleation.

8. In case of necrosis and suppuration of myomata vaginal enucleation is especially indicated, so long as the disease is confined to the uterus alone.—*Prager Medicin. Wochenschr.*

The Treatment of Empyema of the Antrum of Highmore.—Professor Chiari, of Vienna, reports twenty-eight cases of this affection and formulates the following rules as to treatment:

1. In very rare cases empyema, due to alveolar periostitis, may be cured by extraction of the root of the offending tooth alone.

2. Continued irrigation of the nose may also effect considerable improvement.

3. Injections into the antrum, even if undertaken regularly and thoroughly, frequently do not bring about a cure, although, as a rule, some improvement.

4. In cases of recent suppuration resulting from alveolar periostitis a few injections usually suffice to produce a cure.

5. In only one case was it found possible to successfully inject the ostium maxillare in such manner that pus was discharged together with the injected fluid.

6. Systematic injections can be easily and conveniently made through the alveolar process, to make them through the lower nasal passage is a very laborious procedure, carried out by the patient only with great difficulty.

7. Insufflations of iodoform powder do not give positive results.

8. During all these various proceedings the antrum should be closed up toward the mouth.

9. The most reliable results are afforded by tamponing the antrum with iodoform gauze, which rapidly arrests suppuration. It should be practiced only once a week, can be easily carried out by every physician, and shuts off the antrum from the mouth.

10. Preparatory to tamponing an opening varying in size from 4 to 6 mm. is usually made in an alveolus.

The opening may be made in the canine fossa, but only if a perforation exists there already, or the patient refuses to sacrifice a tooth, or if it is desired to thoroughly curette the cavity. Tamponing through the canine fossa, however, is always a difficult and painful procedure.—*Prager Medicin. Wochenschr.*

Treatment of Acute Epididymitis.—Dr. Rohrig recommends the application of the rubber bandage in this disease, which he has employed for the past four years. Under its use the duration of the disease is shortened and usually the testicle has returned to its normal size within eight days. The rubber bandage can be easily removed by the patient himself, and need not be as frequently changed as the adhesive plaster dressing. It is applied as follows:

A rubber bandage, two metres long and five centimetres wide is required. Grasp the inflamed organ from below, so that the epididymis is little, if at all, compressed. Then make two or three turns above the latter so as to give a point of support for the other turns which are made from side to side of the periphery, forming reverses whenever required. The lower portion of the swelling is left free, so that it may be determined whether the compression is too firm, as indicated by the bluish discoloration. If the compression is not too strong the pain ceases within a few minutes; but if it increases the bandaging must be repeated.—*Therap. Monatsch.*, No. 9, 1892.

Reclus—Dawson Technique for Tracheotomy.—Dr. Thomas H. Manley combines Reclus' hypodermic injections of cocaine with Dr. W. W. Dawson's hemostatic method in operations for tracheotomy in adults (*Jour. Am. Med. Ass'n.*). He says, that it is an enormous gain, to be able to annul sensation, without prolonging anesthesia, in those cases of extreme stenosis of the larynx, in which ether or chloroform is administered with both difficulty and danger; and, besides necessitating the presence of two or more assistants. Cocaine is a powerful styptic as well as an analgesic. By combining Dawson's operation of securing all the vessels, as we sink into the deep tissues of the neck, the denuded tracheal rings are exposed and divided, without a drop of blood entering the windpipe.

This method he claims, when its details are fully carried out, strips one of the most dangerous operations in surgery of all its former terror, and renders it possible for the operator, in an emergency to proceed alone without haste, or embarrassing complications which are so common in pulmonary anesthesia.—*Weekly Med. Review*, Oct. 20, 1891.

Antiseptic Memoranda.

Irrigation of Operation Wounds.—In the *American Journal of the Medical Sciences*, is an interesting discussion of the value of irrigation of wounds. Irrigation is rarely employed in wounds known to be free from infection, and with few exceptions, strong solutions are no longer used. To these strong solutions do we owe a number of fatal intoxications in the past. Surgical dressings are now less bulky and cumbrous; they are left longer undisturbed; and they can be bandaged on with less pressure, an important item in the case of amputation of limbs. The drier the operation, the drier the course of healing. Irrigation of an aseptic wound is unnecessary, even harmful. Irrigation should be only employed in wounds which are *per se* not aseptic, as those in the vicinity of or within the several orifices of the body—as the rectum, oral cavity and vagina; it is well employed during operations in and about infected and suppurating areas. The exception to all this is the abdominal cavity, where irrigation is never to be employed. On account of its complex character the peritoneal cavity cannot be completely washed clean; germicidal solutions cannot be used in a strength sufficient to be effective, while weak solutions will only aid in spreading the infection to previously unaffected areas. The tolerance of the peritoneum is almost incredible; but let the limits of peritoneal tolerance once be overstepped and the damage is irretrievable.—*National Med. Review*

Wound Treatment.—Dr. F. J. Thornbury states that the forcible irrigation of suppurating wounds does not simply wash away the purulent secretion, but may tend to force infectious material into the wound. He thinks that under no other circumstances are the conditions for the working of an antiseptic so unfavorable as by the method of irrigation as usually practiced. In fresh infected, and still more in old contaminated wounds, the septic germs are already enveloped in blood clots and imbedded in the tissue particles and dried secretions or crusts. The ordinary antiseptics in dilute solutions cannot permeate these substances to come in contact with contained organisms, while the richly albuminous wound secretion enters into combination with the antiseptic during the irrigation, thereby reducing its effect or destroying its action. The short continuance of antiseptic irrigation also precludes the probability of organisms being destroyed. On the other hand the antiseptic solution may damage the tissues, and by causing especially active secretion, delay healing. For these reasons the author pleads for the dry method (Bergmann's) of treating wounds.—*Buffalo Med. and Surg. Journ.*

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Editorial Department.

NEW YORK, DECEMBER, 1892.

THE PREVENTION OF PERITONITIS.

In a paper read before the Harveian Society, of London, which is published in the *British Medical Journal*, Nov. 12, 1892, Mr. Lawson Tait discusses the nature and prevention of peritonitis; and his views, based upon an immense clinical experience, are so thoroughly practical that they cannot fail to prove of interest to every practitioner. Mr. Tait's theory of the function of the peritoneum differs essentially from that given in most text books. He believes that its importance in the human economy is so great that it should be ranked almost next in order to the brain, and does not subscribe to the view commonly expressed that its chief function is to allow free movement of the organs it envelops. In his opinion, the strange and invariable plications of this membrane, the exceeding vascularity of its surface, the presence of innumerable stomata, and the profuse nerve supply derived neither from the motor nor sensory system, all point to some active function, whether it be that of secretion or absorption. All the organs actively engaged in the primary preparation of the systemic nutrients, are not only enclosed in the peritoneum, but all the blood gathered from these great organs is

collected by a series of minute venous radicles exposed voluminously and immediately under the peritoneal epithelium to any influences which may arise from it.

With regard to the causes of peritonitis, Mr. Tait is equally opposed to the theories commonly held, and forcibly remarks that peritonitis is not a lesion which fits into the germ theory of disease at all. He believes that the influence of the nervous system in the causation of inflammation has been underestimated, and that in peritonitis nerve disturbance contributes more to the death of the patient than microbic invasion. While admitting the existence of a septic peritonitis, he thinks that, save where definable from evidence wholly extrinsic to the condition of the peritoneum, it is an etiological entity which exists only in the mind of the pathological metaphysician.

In the symptomatology of peritonitis the author warns us not to place too much reliance upon records of pulse and temperature, as in this disease they are not only untrustworthy, but may become positively misleading. Alteration of the patient's face and intestinal distension are two signs so constantly present in peritonitis, that they always deserve attention. Alteration of the face is deceptive, however, because many fidgety people, and those who bear pain badly, will put on a face indicative of danger when there is none, and the common habit of administering an opiate after an operation to save pain, is a source of great danger, for it masks this facial alteration at the time when its aid is most needed, that is at the onset of the peritonitis. The alteration of the face most to be feared is not one of pain, but of anxiety, accompanied by a tendency to chatter and ask questions ; if the patient persistently chatters she is pretty sure to die. The symptom most to be dreaded is intestinal distension, which occurs at an early period, and, in the author's experience, this condition has been a prominent feature of every fatal case of peritonitis. It is his custom when he sees distension, to anticipate peritonitis by the administration of purgatives ; if the attempt to purge is successful the patient recovers, if not she dies.

The cause of death in peritonitis is, in conformity with Mr. Tait's physiological beliefs, a disturbance of the ebb and flow of the serum stream of the peritoneum and the disturbance of the functions of the liver.

It would carry us too far to give in full the ingenious arguments adduced by him in favor of this view. Suffice it to say that he regards bilious vomiting, when fully established after the occurrence of distension, as generally indicative of a fatal issue; and the fourth night as the critical time for all abdominal sections, except those involving the use of the clamp in hysterectomy. If the grave symptoms are all matured on the fourth day after operation, a fatal issue is pretty certain. If they hang over till the sixth or later, the chances of the patient's recovery increase in a geometrical ratio, always excepting cases of hysterectomy. Hence it follows, that taking time by the forelock in dealing with peritonitis is everything. The author assails those who talk about treating peritonitis; we must prevent it. His policy is to get control over the vermicular movements of the intestines before the mechanical stasis of the inflammatory process has rendered it impossible. The use of opium by the mouth after operations is vigorously condemned both as modifying or suspending vermicular action, and masking the real condition of the patient. The thirst following abdominal section should not be regarded as an indication for the administration of ice or fluids, but rather for a withdrawal of drinks. Mr. Tait's practice is to keep his patients for as nearly forty-eight hours as may be in absolute starvation, this being modified by age and previous exhaustion. If sickness sets in on the third or fourth day, or at any time after, all food and drink is withheld absolutely for twelve hours or even longer; for nothing can be digested and absorbed by the stomach so long as bile is being poured into it. In his opinion, the starvation and withholding of fluid also prevent the mechanical stasis of the circulation in the intestinal coats, which is the initial stage of the fatal process of peritonitis, and this preventive measure may be assisted by stimulating peristalsis. Inasmuch as the mechanical stasis always originates in the transverse colon, stimulant enemata—soap and turpentine are indicated. In the author's practice the nurse is instructed to give an enema, if a passage of flatus per anum does not occur for twenty-four hours after operation, especially if accompanied by the slightest suspicion of distension. If the enema fails a mild saline purge (generally a seidlitz powder) is administered and repeated every four hours until it acts. The increase of distension should lead us to redouble our efforts to move the bowels, and if successful in this, recovery is usually assured; and even in well established peritonitis Mr. Tait urges a trial of the purgative treatment, although the chances are against its success.

In conclusion he emphasizes the point that the outcome of a case of peritonitis depends far less on

the severity of the symptoms than on the time over which they run; and he has found this peculiarity not only in traumatic peritonitis, but also in other forms and in that known as idiopathic peritonitis.

THE RESPONSIBILITY OF THE SURGEON IN THE ADMINISTRATION OF ANÆSTHETICS.

Considered from a medico-legal point of view, this question is of vital importance to every practitioner. In our own country where the medical man receives but a modicum of the respect and veneration to which he is accustomed in Europe, where the laity constitute themselves a jury to pass upon his actions, the responsibility which he assumes in the administration of anæsthetic is correspondingly more serious than that of the European practitioner. So long as medico-legal cases are tried before juries of laymen, he will in many instances owe his escape from conviction rather to good fortune than to an intelligent criticism of his actions. It is therefore of interest to learn how this question is viewed in Europe. In a recent number of the *Munchner Medicinische Wochenschrift*, Dr. Passet defines the responsibility of the physician in the administration of anæsthetics and holds him guilty of negligence only in case of failure to observe the following rules:

1. The induction of anæsthesia should be preceded by a careful examination of the patient, especially of his respiratory and circulatory organs.
 2. If chloroform is administered it should be admixed with a sufficient amount of air.
 3. The anæsthetic should be discontinued as soon as tolerance is established, or disturbances of respiration and circulation occur.
 4. The circulation and respiration should be constantly observed during the narcosis, and disturbances of these functions calmly and vigorously combated by appropriate measures. Even if appearances of death manifest themselves, attempts to revive the patient by artificial respiration and other procedures should be kept up for a sufficient length of time.
 5. No anæsthetic should be administered during the process of gastric digestion. Constricting clothing and artificial teeth should be removed before the induction of anæsthesia.
 6. The anæsthetic should be absolutely pure.
- In this country by far the greatest number of deaths from the administration of anaesthetics have been attributable to the use of chloroform. It is to be hoped that the investigations at present being undertaken by Prof. Hare, of Philadelphia, will, once for all, settle the question as to the causes of death from chloroform and ether anaesthesia, and teach us the best means of avoiding them.

Original Articles.

COMPATIBILITY OF CONSERVATIVE AND AGGRESSIVE SURGERY.*

By J. MCFADDEN GASTON, M.D., Atlanta, Ga.

The circumspect philosophy of former days taught us, what man has done man may do. But the developments of more recent times say, whatever is practicable may be undertaken, without regard to precedents. Conservative and aggressive processes are combined in progressive surgery.

Conservatism in the use of all the appliances of surgery is not inconsistent with the application of the most energetic means of relief in structural disorders. A misapprehension exists with many of our profession as to the true sphere of progressive surgery, and it is my purpose on this occasion to make a distinction between rashness in the employment of operative measures and boldness in the use of surgical means of relief when clearly indicated. Real advances in surgical practice have not been the result of cutting and slashing without due consideration, but have accompanied painstaking investigation of the conditions requiring the knife and caution in the performance of operations. As a preliminary to any surgical procedure of a radical nature, correct diagnosis is essential, but to accomplish a proper understanding of a deep seated disorder it is often requisite to make an exploratory operation of greater or less magnitude.

The information based upon such an exploratory measure serves as a guide to any further surgical procedure. A verification of any complication, of a serious nature, by an exploratory step, may form a contraindication for the more radical operation which has been contemplated. A great variety of means have been employed under the expectation of elucidating the doubts surrounding very obscure cases, some of which are of a precarious nature, proving far more hazardous than the disease or the proposed radical measure. It is evident that exploratory procedures of this order should be ruled out of our surgical resources, and the prime consideration for our safe guidance in exploratory operations is to be sure that the existing disorders shall not be aggravated by such procedure, nor that other graver developments shall be induced as a consequence of it. It is best always in cases involving mooted points to avoid the appearance of evil. In keeping with this precaution against the abuse of exploratory measures, it is proper to exercise great discrimination in the use of antiseptics in surgery. A most salutary result

may be obtained by employing very active germicides in a case of septic contamination, whereas the same application may not be suited to an operation upon tissues in their normal state. It is now recognized by bacteriologists that certain preparations tend to destroy pyogenic organisms, and when they exist the use of such antiseptic means is indicated. On the other hand, it is becoming fully understood by clinical experience that a resort to these germicidal agents, when the pyogenic organisms are not present, operates unfavorably upon the healthy structures. The reaction in the practice of many surgeons of large practical experience, from observing the absolutely hurtful effects of the ordinary solutions of corrosive sublimate, when brought in contact with the absorbent surfaces of normal structures, is tending to a limitation of this poisonous substance to external use. These do not belong to the class of "superfluous laggards," who are characterized as opposed to the methods of asepsis and antisepsis, by the author of a recent work on surgery. But they are of that independent order of creation who are not bound down by any prescribed formula and are bold enough to abandon a vicious practice which has brought trouble in its train to many victims of routine treatment.

It is well known to all surgeons, who have investigated thoroughly the merits of antisepsis, that there are many germicidal applications far safer than corrosive sublimate, which meet all the requirements in surgery, and the day is not far distant when the use of the solutions of corrosive sublimate will be excluded from all operations upon incised healthy structures. There is a gradual movement of the pendulum of antisepsis towards asepsis, and it is found that sterilized water is the safest and best wash for surfaces not contaminated by previous septic developments in their tissues.

Antisepsis has a legitimate field of use in surgery, and it is to be regretted that the careless extravagance of the advocate of sublimate solutions should have given this process a black-eye by poisoning patients with them, who could have been treated successfully with other antiseptic agents.

Great detriment to proper antiseptic treatment has ensued from the indiscriminate application of solutions of corrosive sublimate, but judicious men are now more guarded in employing them in surgery.

Upon the general principle that no surgical operation of any magnitude should be undertaken without proper knowledge of the habits of life on the part of the patient, I may advert to a fact which is overlooked by many operators, in regard to the importance of continuing the use of any stimulant or narcotic to which the patient has long been accustomed.

* Annual Address before the Southern Surgical and Gynecological Association by the President.

Within my experience the interruption even of the tobacco habit has been followed by troublesome nervous depression after operations, and the resumption of the use of this narcotic has afforded complete and prompt relief. I recall an instance of laparotomy for the removal of an immense cystic tumor of the ovary in a lady sixty years of age who, of her own accord, stopped smoking the pipe after the operation. For a few days all seemed to be doing well with the case, but at the end of a week there was a most profound depression of spirits with vital prostration, which immediately disappeared upon resuming her pipe and the final result was entirely satisfactory.

We all know that a patient who has been addicted to the use of alcoholic drink for a considerable period before submitting to any surgical operation, cannot have it suddenly abstracted without being subjected to great disturbance of the entire nervous system. If he does not reach the point of perturbation to produce delirium tremens, there will still be such derangement of all the functions as to interfere materially with proper nutrition, which may pave the way to serious complications in the after-treatment of the case. It is, hence, essential under such circumstances, to take into account the previous habit in this respect, and continue to give certain quantities of the alcoholic stimulant at fixed periods to avert any troublesome consequences. An individual may fail to give such information as to habits of life in regard to the use of alcoholic stimulants unless specially interrogated and yet would not hesitate to state the fact upon inquiry for the guidance of the surgeon in his case.

The most important matter, however, for our investigation is in regard to the opium habit in one subjected to a grave operation. I am convinced from a case which has recently been reported to me, that operators of experience and with a full knowledge of the use of morphine by a patient, do not always realize the great detriment resulting from the sudden withdrawal of this article after an important operation. All abnormal conditions resulting from any habit should be compensated in the after-treatment. Observation of the changes resulting from inflammatory processes, should be accompanied by a study of those modifications impressed upon the tissues by impairment or undue activity of the nerve element, which enters into their composition. That many operators fail to take into account the nervous system, in their surgical pathology, shows a lack of due consideration of the surroundings of a patient. While the legitimate field of surgery is the proper use of means of relief for organic or structural dis-

orders, there are prerequisites in the recognition of the conditions warranting an operation and in the preparation of the patient for undergoing it safely, which should characterize the highest type of the surgeon.

The distinction of external and internal treatment is held by most European authorities, as the basis of recognition for the practice of surgery and medicine. But this line of distinction does not imply that all disorders of the inner structures are to be left for the treatment of the practitioners of medicine. Nor should all the pathological conditions not demanding operations be excluded from the domain of surgery. A proper recognition of the scope of surgery and medicine is that of organic and functional disorders of the system.

With this limitation of the province of the physician as contradistinguished from that of the surgeon, the work of the former should be confined to such measures as are calculated to correct the performance of the functions of the different organs of the body, whether internal or external.

When organic changes ensue, whether demanding the use of medication or a resort to operative measures, the case comes then within the field of surgery. It presents a modification of structures, more or less pronounced, which alters the constituents so as to produce a departure from the normal state of the part involved, in its size, shape, or density. An incision or a puncture may be requisite to diagnosticate such a condition, but if this change of structure could be clearly ascertained without any exploratory operation, the case would still fall within the domain of surgery; with this distinction between functional and organic disorders for the practice of medicine and surgery, so soon as a change in the state of the case is recognized by the physician, it should be transferred to the charge of surgeon, and he will still have the disadvantage of combating the latter stages of organic disorders. It may be that a skillful operator is not qualified for the highest attainment in surgery, from lack of proper precaution in proceeding with an operation.

The aim of the surgeon should be a due comprehension of abnormality in the structures of the part involved, and his end be to afford relief with the least possible injury to the organ or member which is the seat of disorder. Conservative surgery may be destructive of certain parts for the purpose of saving the structures, and the properly qualified surgeon should consider maturely every phase of the case under examination, so as to assume the responsibility of lopping off the disease and prevent its extension to the sound tissues. He who fails

to use the knife or the cautery, when a resort to either would stay the progress of disease, is not the exponent of conservative surgery, but, on the contrary, aids and abets the work of destruction in the parts implicated, while he contributes ultimately to the death of the patient.

Ignorance and inexperience often leads to sad results in meddlesome surgery, when limbs are sacrificed or organs mutilated, to gratify the desire to figure as a bold operator on the part of a would-be surgeon.

In such cases no high-toned member of the profession should shield the culprit from the charge of malpractice or from the assessment of damages by a court of justice. While the allegation of malpractice, without sufficient cause, should never be encouraged by the better class of practitioners, it would be well to bring home to those who rush into the surgical arena, unknowing and unknown, the consequences of their rashness. Of the two evils over-caution against doing harm is far preferable to meddlesome surgery, and yet we would not hold him guiltless who stands with folded arms and suffers a patient to die who might be saved by a timely operation.

There is a field in surgery for masterly inactivity, and non-interference is to be highly commended when by an operation a fatal result is precipitated. The want of a proper investigation of a case presenting grave complications may lead a physician to delay in calling a surgeon until the opportunity for relief has passed and his interference can avail nothing, so that he is justified in standing aloof.

There are numerous instances of the failure in surgical procedure from the late period of performing an operation, and it is greatly to be desired that a surgeon should be called in proper time by physicians having cases under their care which are likely to require surgical interference. If a consultation should be called and the surgeon found no indications for an operation, then, of course, the physician would be relieved of any future responsibility in proceeding with the treatment. But most probably their joint attendance would lead to the most satisfactory result in enabling them to determine upon the conditions developed in the progress of the case which might warrant an operation.

The dilatory spirit manifested by patients and those around them, as to resisting surgical means of relief in acute cases, has proved a barrier to the adoption of the expressed views of surgeons in favor of prompt action in many cases of great urgency. All practitioners of considerable experience have had occasion to regret that the opportunity for forestalling a grave malady has been lost by the indisposition

to submit to a timely operation, and they led a further hope to end in disaster.

In this connection, however, it may be appropriate to consider the claims of a different case to our attention; when death is inevitable without an operation, and the knife affords the only chance, however slim that may be, for escape, it is a fair mode of dealing with this class of cases, for the surgeon to put himself in the place of the patient and determine what he would desire for himself under similar circumstances. Most of us, I think, in the possession of our faculties, would avail ourselves of the operation, and hope for the best result of it. Viewing matters from this standpoint, if those interested in the patient manifest a desire to take the risk of which all are apprised, I think we are warranted in operating, even should the probabilities be greatly against a successful result.

It is very true that untoward results, even when expected, tend to discredit surgery and to give an excuse to others for declining an operation at a certain stage when it might serve a good purpose. But considering the surroundings of the individual alone, we have certain death without an operation staring us in the face; and if the patient, after being advised of the situation, desires an operation, it should be performed.

But we have a serious question for settlement among ourselves as surgeons, and I am more especially concerned in the proper adjustment on this occasion of the differences in the surgical views of those who are equally entitled to think and to act in regard to surgical cases of great gravity.

At the risk of being considered heterodoxical I would draw the attention of the profession to a consideration of the propriety of immediate operation in that desperate class of cases which result from the crushing and mangling of limbs, attended with profound shock. It has been the custom of most surgeons to watch and wait, while means are resorted to for restitution of the vital forces by stimulants. With our deficient knowledge of the exact etiological factor in this anomalous condition, I am inclined to the view that a continuous baleful influence is propagated to the nerve centers from this disintegration of the structures involved, and that this may be modified favorably by a clean incision through sound tissues above the point of the injury very soon after such violence to the parts. It strikes me forcibly that surgical relief within fifteen or twenty minutes after an accident, involving the muscles, bones, nerves and blood vessels, cannot intensify the shock, and that many of the cases left to die without any operation might be rescued by a prompt amputation of

the member. The A. C. E. mixture offers the most favorable conditions for an anesthetic and tends to lessen rather than increase the prostration, while the operation should be done with all possible dispatch.

It may prove the most conservative surgery to lop off structures whose vitality is completely destroyed and under the proposed state of the parts there can be no prospect of any restoration of nerve power or circulation to the tissues by delay in undertaking an operation. A proper appreciation of the participation in shock by the ganglionic nervous system should impress the surgeon with the great importance of arresting the morbid influence at the very earliest period practicable by removing the cause, while energetic correctives are employed.

At this point it may be appropriate to advert to the precautions requisite in all grave operative procedures to avert a depressing effect, independent of previous violence.

I have been convinced, by observation that the use of moderate doses of quinine and strychnine during twenty-four hours, preceding any important surgical operation, seems to ward off the nervous prostration. It has also been my custom to administer an alcoholic stimulant with a hypodermic of morphine and atropia within a half hour preceding such an operation, and these preliminary measures have been attended with most satisfactory results. Prevention of shock is preferable to combating it by energetic means after a surgical operation.

As a fitting conclusion of this whole matter I would suggest that no surgical measure should be resorted to without looking into and correcting all underlying departures of the physical organization from the standard of health. It may not be possible to restore the normal condition of the secretions and excretions, yet means should be used for their correction, so far as may be practicable, as a preliminary step for even the most simple operation; as the surgeon never can know in advance what complications may be developed in the course of treatment.

To prepare a patient for undergoing any capital operation, when the forces of the vital organism have been exhausted by long suffering, it is requisite to support the system by tonics and nutritious food for days or weeks prior to the surgical procedure. A neglect of this precaution is inexcusable, except in cases of urgency, when the delay would be likely to aggravate the malady.

The after-treatment in surgical cases is in like manner of great importance to secure a good result, and this should include not only medication and food, but proper seclusion from exciting associations and due regard to the hygienic surroundings.

SUPPURATIVE, PERFORATIVE OSTEO-MYELITIS, IN THE SHAFT AND EPIPHYESSES OF BONES, WITH THE REPORT OF SIX ILLUSTRATIVE CASES.

BY THOMAS H. MANLEY, M.D., New York.

The study of those pathological processes, which are limited to the osseous structures, occupy an important place in surgical history; and yet, in our time, many of them are but imperfectly understood, and in consequence must be mainly treated on empirical lines.

This is particularly true of what we now designate tuberculous disease of bones, a condition which, until very recently, when occurring in growing children, was always known as strumous or scrofulous and was regarded as a phase of malnutrition. Not a few of the now ancient writers insisted that the groundwork in its etiology, was nothing less than a degenerate or bastard phase of transmitted syphilis.

It was for a long time taught, that strumous disease of bone was an hereditary malady, though it might be, in rare cases, caused by unhygienic surroundings and insufficient or improper diet. Many of the afflicted were offspring of phthisical parents, and hence, it was assumed that there was an affinity between those bone lesions and pulmonary phthisis. But, the aniline dyes and the microscope, at last made it possible to demonstrate incontestably, that the bacteriological elements of consumption and struma were identical. Pathologists soon discovered that the lymphatics were the favorite habitat of Koch's bacillus, and that it was probable that the infective elements were diffused through these vessels.

The morphological and bacteriological elements of pulmonary phthisis and suppurative bone disease were found to be precisely alike; but there was noted a very wide difference in the clinical history; for, while the former commonly pursues a fatal course, the latter in children, though occupying years in its evolution, tends toward complete recovery in the vast majority.

The phase of bone disease here reported, though possessing many of the characteristic features of typical tubercular infection in its clinical history, has, however, several important features, quite unique. Tubercular bone disease most frequently occurs in the growing child, and its place of selection is the spongy, cancellous epiphyses. When present it is often accompanied by a characteristic cachexia, anæmia and general debility. With but one exception, of the six cases reported all occurred in adults; and in but one was there the diurnal, hectic fever of tuberculosis. There was no well-marked hereditary taint in any, and

in four, the local disease was limited to the diaphyses. There was no history of syphilis and none of traumatism. In all, the starting-point of the malady was in the bone-marrow or the medullary membrane.

In order to better appreciate the mode of propagation and spread of infection through the tubular shafts of bones, it becomes necessary to observe the structural elements and their arrangement in the medullary-substance.

According to the most recent investigations, bone-marrow consists of cytogenic tissue, and histologically as well as functionally, may be placed side by side with the spleen. Histologically, a like character of the medullary elements is found in the bone-marrow, and a similar arrangement and structure of the blood-vessels, *viz.*: the small arteries passing directly into much wider, thin-walled blood spaces; the same as in the cavernous, splenic veins.

The behavior of the bone-marrow varies with the particular bone, age, condition, sex, etc. To that condition we will have, at various stages of life and in various bones in the same individual, the mucoid, the red and the yellow varieties.

After the tenth year, mucoid-marrow becomes red, more vascular and compact, and after middle life it becomes, through degenerative changes, of a waxy, yellow color and consistence. This latter condition, however, may be met with in the marasmus of childhood, as well as in the adult, in certain wasting diseases, in which the red marrow reverts back to, or is transformed into a jelly-like substance. I have met with a case, in a man of fifty, in whom, by a process of absorption from within the tibia, the marrow-cavity had greatly enlarged, so that it was enclosed by nothing but a mere shell of bone, the marrow itself having wholly disappeared; nothing remaining but a broad, dark streak in the inferior surface of the bone, to mark its former site.

The investing tunic of the medulla, the internal periosteum proper, in origin and composition, is identical with the osteo-genetic layer of the external periosteum. In embryonic life, the marrow is derived from an ingrowth of the osteo-genetic layer of the periosteum, and also in adult life, the two tissues remain directly continuous.

The medullary-membrane is intimately connected with the inner wall of the bone; and it is through this structure that the nutrient emulgent vessels pass to and from the cytogenetic tissue of the marrow. Langenbuch and Virchow and others have traced fine ramifications of the lymphatics into the marrow substance.

Independent of other functions, the medullary substance serves an important physical purpose in modifying concussion and irritation in jars of the body;

besides, in imparting to the cellular elements of the bone an oily fluid, which gives them, in early life, their pliancy and elasticity.

Simple, uncomplicated inflammation of the bone-marrow is never seen, except in acute syphilis. Osteo-myelitis, on the contrary, is a common affection. Indeed, it is not quite obvious how an inflammation of the marrow, which bears such an intimate relation with the bone elements, can separately exist. No doubt, myelitis, so-called, is like many other terms of the pathologists—rather arbitrary than definite.

Local osteo-myelitis may have its origin in traumatism, in chemical irritation, and infection.

Many cases have come under my observation, of a character exclusively dependent of injury. Since strong, chemical solutions have come into vogue, as surgical-medicaments, I have seen very many cases of osteo-myelitis supervene, of a very serious description, after their employment. Many cases come under my observation, in which custom sanctions the recognition of infection as a cause. A diverse variety of cocci or bacilli are present, more particularly the streptococci, the bacterium termo and the tubercle bacilli; but I must confess that while we cannot dispute the evidence of our own senses, yet this theory of infection is not quite conclusive to my mind, as a sole factor in causation. If it were so, why do those pathogenic atoms enter the circulation or the lymph-system, pass into and through the fine delicate structures of the organs, from one region of the body to another with impunity, to spend their energy on a local area in a single bone? And if these conditions were contagious, why should nineteen out of twenty escape?

There must, then, in those cases of local osteo-myelitis, be other influences in operation than infection; and those which occur to one as the most probable, are vaso-motor; an enervation which affects the nutrition in a given part and leads to an atrophic degeneration, with inflammation and suppuration as merely consecutive events.

It would be rational, also, to assume, that the vascular structures play an important *rôle*; as in peripheral endarteritis, with multiple emboli, or, through the occlusion or plugging of the minute arterioles by multiple thrombi.

In these cases of local, suppurative osteo-myelitis, the tendency which inflammatory changes exhibit, is to make their way toward the surface, attacking and penetrating, in turn, the medullary-envelope, the myloplaxes, the lacunar canals of Haver's, and then the laminated layers of the compact substance, and the periosteum or perichondrium.

When the pus is walled in by an adventitious, protecting wall, the suppurative process is entirely local

and makes its way through the integument, in a manner analogous to a phlegmon; but, unhappily, occasionally this pus-formation diffuses itself throughout the whole extent of the marrow-cavity; and being imprisoned, its lethal elements give rise to an irritative hypertrophic osteitis, which causes a considerable increase in volume in the shaft which it occupies. Under these circumstances, when the hollow of the bone is opened, we will find that the marrow has degenerated into pus, and in places the marrow-cavity is stuffed with thin, perforated plaques of dead bone which had been thrown off by internal necrotic processes, and which now lie macerating in the fluid residue of inflammation.

It is scarcely necessary to remark, that in those cases of incarcerated suppuration the general system actively sympathizes. In fact, the patient is suffering from a low grade of pyæmia.

The Clinical Symptoms in Perforative and Non-Perforative Osteo-Myelitis.—As has been noted in the perforative type of suppurative osteo-myelitis, the symptoms are mainly of a local character, the general health being slightly, if at all, implicated. In the non-perforative, there are always well-marked and severe constitutional disturbances, such as loss of sleep, strength and appetite, with nocturnal pains and perspiration and fever-temperature. The pulse is quick, the skin is blanched, the cheeks flushed, and the eye glassy.

The onset of osteo-myelitis is gradual or sudden. I have seen it destroy the ankle-joint and make amputation imperative in three weeks after its invasion. A patient has gone to bed in his usual health and waked up with a severe pain in the limb, which has continued incessantly, until pus was evacuated.

Diagnosis and its Difficulties in these Cases.—It would seem at first sight, that the diagnosis of suppurative osteo-myelitis should be easy and exact; that in perforative cases of shafts, in which one has an opening through the overlying structures, penetrating directly into the hollow of the bone, it should, one might suppose, be very simple.

Notwithstanding all this, however, the diagnosis is often attended with very many difficulties, and, in the majority of cases, is quite impossible, without a free, exploratory, but cautious incision down on to the bone. I have seen so eminent a surgeon as Esmarch diagnose suppurative myelitis, cut for the abscess, and find nothing.

The lymphatics which lie along bone ridges and the muscular planes, are so apt to take on purulent changes and burrow through a long, sinuous track to the surface, that unless a thorough and methodi-

cal examination is made, we are apt to overlook the bone lesion. If we depend on sounding for carious bone with the probe, we will often be deceived in those perforative cases; for the canal is tortuous, and the annular hiatuses in the bone bear no relation to each other in the position which each occupies; as one may lie from one to three or five inches further up or down than the other; and, while one occupies the external aspect of the shaft, the other is internal. In none of the cases cited here, was I able to touch the denuded bone with the probe.

There are, nevertheless, certain, quite definite, subjective and objective symptoms and signs which will throw considerable light on many obscure cases. The subjective symptoms are occasional nocturnal pains, with a sense of weakness, though not pronounced, yet distinct, in the muscles which arise from or play on the affected bone, with now and then radiating neuralgic spasms, in the course of the long axis of the bones involved. The objective symptoms are quite exclusively local, though the general nutrition is rather below par.

We must now critically examine the bone involved. If in one of the extremities or in symmetrical bones, an examination by contrast is invaluable. Do we find equal muscular action and strength? Are the muscles sensitive, tender, or painful on pressure or tension? Is the contour of the suspected bone regular, or do we find evidences of local thickening, with pain over the swelling?

Should we find with the symmetrical bones that they are equally enlarged, we might suspect syphilis, but if one preserves its natural outline, while the other is markedly enlarged, we may suspect a purely local, ulcerative caries.

There is seldom anything characteristic of the discharge, as might be expected from a bone abscess. Professor Sigmund Waterman, of this city, has pointed out to me the peculiar teat-like elevation of the granulating surface, through which the discharges escape, in these cases of fistulas of an osseous origin, which he designates the "maiden nipple," because of its outline, size, dimpled or umbilicated surface.

We notice the effect of gravity on the discharge through the sinus, hence, when the femur or tibia is the bone involved and the upright posture is assumed it is abundant, while there is little or none in the dorsal decubitus. In many, the opening will temporarily heal, when a sense of local fullness follows, which is unrelieved until it reopens. A certain proportion of cases after discharging over a long period of time, take on healthy changes and get well.

Little shall be said here of non-perforative, suppurative osteo-myelitis, as the subject is beyond the

scope of this essay, except as bearing on one case of this lesion, reported in the group published.

Operative Technique in Medullary Abscess of Bone.—The treatment of bone lesions, in those cases of perforation is not difficult, when its exact situation is determined.

Owing to the long, serpentine course of the sinus, the probe is of little value; so that the part suspected must be reached by some other means. The touch of the experienced finger alone, will serve for all purposes.

My plan is to make an incision about three inches long, immediately over the outer opening, carrying the edge of the scalpel down to the bare bone. Then, in order to avoid the main blood-trunks or nerves, press away with the finger all the muscular substance contiguous with the shaft, until a depression in the wall of the bone is felt. Should the lesion be located on an opposite side, far above or below, then a second incision is made which, on retraction of the tissues, permits us to not only feel, but also distinctly see the outline and situation of the opening in the bone. If one be timid or inexperienced, he will be confused in this, the first step in the operation. Cutting down on the bone, he may hesitate at not coming *directly* on the seat of disease. And, if in a very vascular district, he may not care to take chances of a dangerous hemorrhage. But this first step must be completely carried out, or all else fails, as shortly after the fresh wound heals the fistula breaks out afresh in the same or another site.

Second Stage of Operation.—The chasm in the bone having been detected with the finger, and freely exposed, if there are evidences of marginal caries, it must be freely cut away with an osteotome or a grooved chisel. The ordinary carpenter's chisel serves a most useful purpose in all simple cases. The opening in the bone having been freely enlarged, the bone-cavity is cleared of any necrosed spiculae and freely cleared by the bone-curette or scoop, until a sound, hard, vascular substratum of osseous tissue is reached.

Third and Final Stage.—Now, if we are quite assured that every remnant of the diseased debris has been cleared away, we may then and there, by the deep flap and cutaneous suture, *at once* hermetically seal the incision. But, if we are in doubt, it will do well to insert a small drainage-tube, or a twist of gauze. In a general way the latter is the most judicious course to follow.

The hollows which we leave in the bone in young people, will quickly fill in by proliferation and osseous condensation; but in the old, in whom osseous tissue is but feebly, if at all, regenerated, those dead-spaces may give trouble. With them a graft of the

soft parts, *en masse*, or filling them with arterial blood-clots, which will later on, by a process of cell-nucleation, segmentation and consolidation, succeed in stuffing those chasms with vitalized elements.

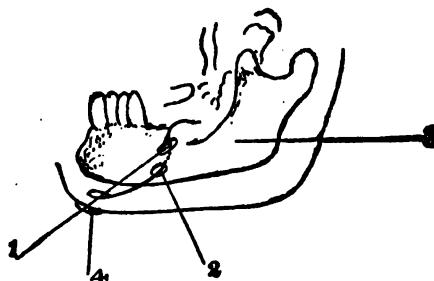


FIGURE 1.

1. Internal opening into buccal cavity. 2. Opening at inner surface of ramus. 3. Left infer. maxilla, ext. surface. 4. External fistula.

CASE 1. Patient, Eva B., single, 21 years old, German. No specific history; disease of three years' duration. Has had no dental caries; discharge seropurulent and intermittent. Pain slight. Limitation of jaw-bone movement. Has been treated by poultices, irrigation and curetting, ointments and bandages. Came under my care June 12, 1890. Was operated on in my office on June 25th. Recovery was prompt and permanent. She has since married, has had one child, and has no inconvenience from her old jaw trouble.

In this case the external fistula was near the symphysis mentis, though as seen in the diagrammatic sketch above, the opening in the jaw, externally, was about the center, between the angle and mesial

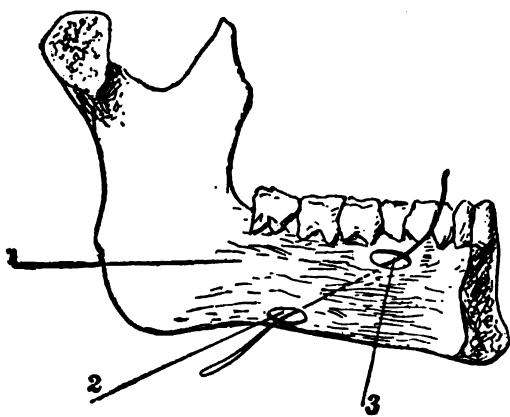


FIGURE 2.

1. Left infer. maxilla, intern. surface. 2. External opening through internal surface of ramus. 3. Internal opening through alveolar border.

line; while the opening into the buccal cavity was near the second molar tooth. No drainage was employed in this case, and primary union followed. (Fig. 1).

CASE 2. Patient, Bertha M., Bohemian, aged 23, single. No specific history; general health good.

Diagnosis: Perforative, suppurative-osteomyelitis of lower jaw. Had been treated by diverse methods for over two years without any benefit. Had trouble in the jaw dating from the extraction of a tooth three years previously. She suffered from considerable pain particularly when the weather was cold and changeable, was unable to use the molars on the affected side, without causing pain. On physical examination the jaw was found limited in motion and from the angle forward was much thickened and sensitive.

The case was operated on Aug. 12, 1892. Operation was commenced by making a crucial incision through the gum, posteriorly over the site of the extracted tooth. I at once came down on two deeply buried, but firmly imbedded fangs. These were now extracted, when an opening extending from where the first one was removed was found with the probe, which had passed through the body of the jaw obliquely. Result same as previous case—radical and permanent cure. (Fig. 2).

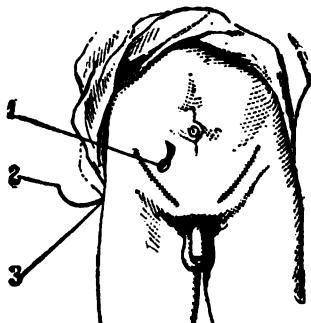


FIGURE 3.

1. Inguinal opening. 2. Probe. 3. Gluteal opening.

CASE 3. Patient, male, 21 years old, in good bodily health. No specific disease. Case referred to me in 1886, by Dr. John G. Truax, of New York, who kindly assisted me in the diagnosis and treatment. Patient had an iliac abscess for two years. It was supposed first to have started in the coxo-femoral structures; then again, some supposed that it might have arisen in the bodies of the lumbar spine, and made its way outward in this circuitous direction. Again, one practitioner supposed that it might have had its origin in a perityphilitis; the pus of which had made its way through the abdominal wall. I was unable to make a diagnosis, but it seemed to me, however, that the disease was of bone origin. As it was a cause of much inconvenience and pain to the patient, who was a bright young man, I advised radical measures, *viz.*: that an exploratory incision should be made and the seat of disease sought for.

Operation. A long oblique incision was made over the ridge of the iliac bone, through integument and

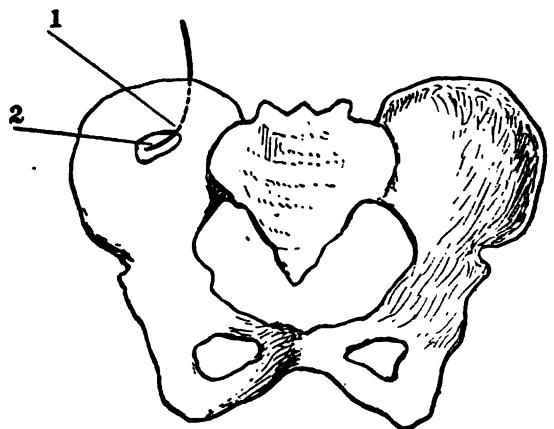


FIGURE 4.

1. Probe. 2. Perforation in iliac plate.

muscle, until the periosteal investment of the inner aspect of the iliac fossa was reached. Now, the finger was introduced, when, by following a soft, pulpy path under the iliacus and psoas muscles, an annular depression was met with, passing through and through the bone. I now made a counter opening through

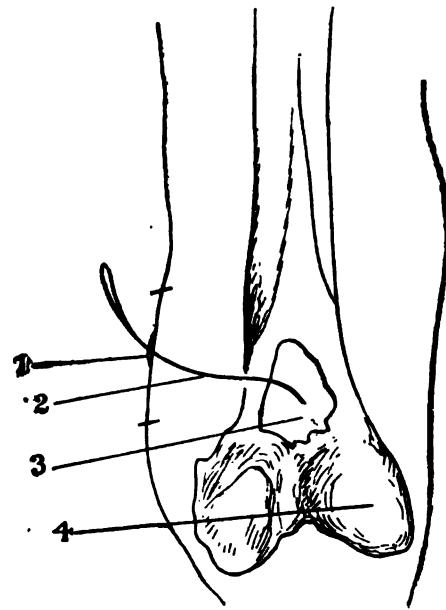


FIGURE 5.

1. Ex. Fistulous opening. 2. Probe. 3. Hiatus in the bone. 4. Femoral condyles.

the gluteal region, performed complete and radical grattage, and carried a tube through. Recovery was prompt and complete. Six years subsequent to the cure of the bone affection, he suddenly died of rheumatic endocarditis. (Figs. 3 and 4).

CASE 4. Patient aged eight years. Healthy parents living. No history of traumatism. Has been a cripple for two years; referred to me by Dr. O'Bryne, of

Mott Haven, New York, July 9, 1892. Patient was unable to walk on affected side; general health good.

Local condition. Femur much thickened and tender to touch. All sorts of palliative treatment had been tried, but still the discharge kept on undiminished.

Diagnosis: Suppurative, perforative osteo-myelitis.

In this case the fistulous vent through the soft parts was a distance of more than four inches away from the necrosed opening, in the inter-condyloid space of the femur. The hollowed head of the bone was hard-packed with loose, dead sequestra, which were removed and the parts effectively scraped. The parts were well drained, and when I last saw him, ten days ago, he was able to come to my house "on foot" and was rapidly regaining full functional use of the distressed limb. (Fig. 5).

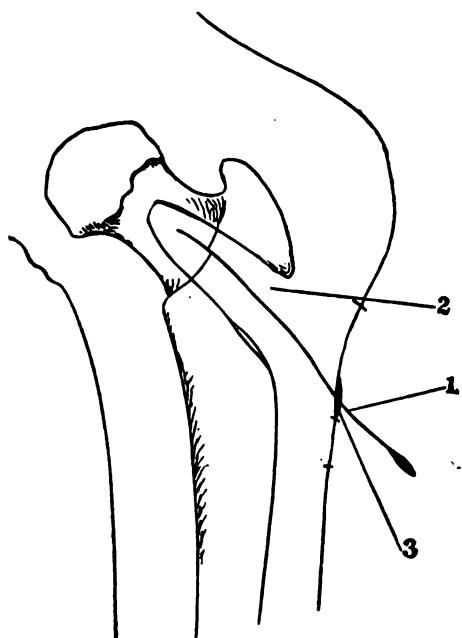


FIGURE 6.

1. Probe. 2. Opening in great trochanter. 3. Ext. Fistulous opening.

CASE 5. Rachel D., aged 64 years, widow. Has had no specific disease that she was aware of. General health only fair.

Local condition. Well marked limitation of motion in the left hip-joint, and pain is felt when pressure is made over the upper third of shaft of the femur. Discharge has continued more than a year. Operated on the case in Yonkers, N. Y., in the presence of and with the generous assistance of Drs. Waterman, Truax, Benedict and Harrington.

Operation. I was obliged to make a deep incision through the thick fleshy covering of the upper third of femur; introducing the middle and index fingers

and pushing the muscular tissues aside, I came on to an annular, necrotic area in the trochanter major. This was scraped and penetrated far into the femoral neck. Large quantities of pus escaped from the medullary cavity.

This case was operated on ten days ago, and is now doing well. (Fig. 6).

CASE 6. This patient was 30 years old, and though it does not belong to the preceding group, I insert it because of the narrow escape the patient had of losing his leg, and the simple manner in which it was saved.

Patient was of Irish birth. Had sustained no injury. Great pain and thickening of tibia; onset, like a shot. Went to bed well and woke up a cripple.



FIGURE 7.

1. Probe. 2. Cavity in bone shaft. 3. Trephine opening.

First consultant regarded the case as osteo-sarcoma, and advised prompt amputation. The case was Dr. J. J. E. Maher's. When I saw the patient first there was hectic and rise of temperature. I ventured a diagnosis of suppurative osteo-myelitis, and the next day, March 12, 1892, in presence of Dr. Maher and the house-staff at the Harlem hospital, I trephined, opening into an immense abscess in the medullary cavity.

Patient rapidly recovered the entire and full use of the limb, and is now at his usual occupation. (Fig. 7).

FLOATING LIVER, WITH REPORT OF A CASE

BY J. F. BINNIE, A.M., M.B., C.M.

*Surgeon to All Saints and the German Hospitals,
Kansas City, Mo.*

It is, of course, by no means rare to observe extremely slight degrees of dislocation of the liver. Normally the liver changes its position with every inspiration and expiration and with each change in the attitude of the body, but these changes in hepatic position are physiological and cannot be classed as dislocations. Various degrees of true dislocation, however, are noticed under certain pathological conditions. Guttman^{*} writes: "Dislocation downwards is produced by all those conditions in which depression of the diaphragm is a marked symptom—the several forms of pulmonary emphysema, right pleuritic exudation and pneumothorax; in a rarer class of cases the depression is due to relaxation of the *ligamentum suspensorium hepatis*. * * * * A very common cause of downward dislocation of the liver is right pleuritic exudation * * * in such cases the right lobe is drawn further down than the left, so that the organ is made to take up an oblique position in the abdominal cavity, the descent of the heavy right lobe rendering tense the suspensory ligament and causing the left lobe to turn more to the left and upwards." Ziegler[†] mentions dilatation of the stomach with lax abdominal walls as a marked cause of *hepas mobile*.

In these cases, of which Guttman speaks, the liver is simply dislocated by the pressure of fluid or air acting through the diaphragm on the same principle as is active in dislocating the heart towards the right in left pleuritic effusions.

I have been able to find notes of but few cases of true movable or floating liver. One is reported by Dr. T. D. Griffith, and referred to by Harley in his classical work [‡]. Here the liver was dislocated, rotated and freely movable, in fact, was in the same condition as the case about to be described with the exception that in Griffith's case the organ was of normal size. In the *Reference Hand-book of the Medical Sciences* about a dozen similar cases are referred to, but in none of these is it mentioned that the diagnosis was confirmed by operation or necropsy.

As showing the mobility of the liver under certain conditions, mention may be made of the fact that in abdominal wounds parts of the liver have been known

* Hand book of Physical Diagnosis by Dr. Paul Guttmann, translated by Alex. Napier.

† Ziegler's Pathology, Chap. LVI.

‡ Diseases of the Liver, by Harley, p. 58.

to protrude, and the whole organ has been found prolapsed in large diaphragmatic and umbilical herniae [§].

Some of the cases mentioned as having been diagnosed movable livers, may possibly have belonged to a class called constricted livers (Schnurleber). These constricted livers are generally the result of tight lacing. The indentations from the constriction are practically always situated on the right lobe, and when deep, this lobe may be almost completely divided, leaving one portion of the liver freely movable in the abdominal cavity, though still attached to the body of the organ.

Lius describes a case in which he found, during an operation, a broad based tumor, the size of a child's head, on the lower surface of the liver. This tumor was removed by the ecraseur and Pacquelin's cautery, death ensuing in six hours. Examination of the tumor showed it to consist of a fibrous capsule containing liver tissue. Konig [¶] is of the opinion that this case was one of a lobe of the liver partially snared off from the rest of the organ and thus rendered freely movable in the belly, such conditions having been not infrequently mistaken for tumors and discovered during operation. Such constricted organs can give rise to many symptoms identical with those of floating liver.

REPORT OF CASE.

Miss D, aet. 47, American, music teacher, admitted to All Saints' Hospital in the end of August, 1892, complaining of obscure pains on the right side of the abdomen, which radiated toward the right shoulder. Patient gives the history of having sustained a fall on the right side many years ago; but although at that time there was some suffering experienced in the hepatic region, yet from this she completely recovered. She has never been addicted to tight lacing as she believed that that would have interfered with her singing. During the past four years patient has had several illnesses attributed to dyspeptic troubles. One physician consulted found enlargement of the liver. For long the bowels have had a tendency to constipation. Patient has been progressively losing strength.

During the past three years a tumor has been noticed on the right side of the abdomen. Tumor was noticed to be movable and to be gradually attaining a lower level in the belly. Six months ago patient passed through an attack of jaundice from which recovery took place.

Status Praesens. Patient is very thin and of a somewhat nervous temperament. There is a slight yellowish tinge about the conjunctivæ. Pains in the right side of the belly radiating to the right shoulder

[§] Compend. d. Path.-Anatom. Diagnostik. Orth, s. 471.

[¶] Lehrbuch d. Spec. Chir., Bd. II., s. 292, Koenig.

and back are complained of. A rounded, smooth, hard, movable tumor is present, its greatest prominence being in the mammary line at the level of the umbilicus. This tumor seems to be about the size of a large fist. There is some rigidity of the abdominal muscles developed whenever palpation is begun and this clouds examination. Dullness over the tumor is absolute. The tumor is suspected to be either a distended gall bladder or a carcinoma of the ascending colon.

An exploratory laparotomy advised.

Sept. 6th. The bowels having been well purged, though with difficulty, the patient was anaesthetized. The abdomen was now cleaned with soap, water, brush, razor, ether and sublimate solution. This cleansing was not done on the previous day, because of the observation made by Dr. Thrush that patients do not sleep well the night before an operation if dressings have been applied to their abdomens, and it appears to me that a good night's sleep before an operation is of more value than any *preliminary* dressings.

Under the ordinary precautions an incision, four inches in length, was made over the most prominent part of the tumor. The abdominal veins were found to be much engorged and bleeding was thus somewhat free. The peritoneum having been opened, the tumor immediately presented and was found to be a movable or floating liver. The organ was dislocated, rotated, and freely movable. The original right edge was now inferior, the superior surface, of the right lobe at least, was directed toward the right and forwards, while the normal inferior surface with the gall bladder faced toward the left and backwards.

The suspensory ligament was elongated. The right lobe of the liver was enlarged by about one-fifth, and on its surface was a slightly raised pinkish-yellow nodule, about the size of a silver dollar or rather larger, hard on palpation and presenting the usual characters of hepatic carcinoma. The surface of the liver was innocent of any groove or constriction.

The abdominal wound was now closed by interrupted sutures of thick juniper alcohol catgut, which included the whole thickness of the abdominal wall. To obtain accurate apposition, a continuous superficial suture of catgut was also used.

The peritoneum was not sutured separately, because the tumor pressing forwards made tension too great for such a suture to be introduced.

Dressings of subiodide of bismuth, sublimate gauze and absorbent cotton, were applied and kept in place by a tight binder.

Sept. 17th. With the exception of a temperature of 100° F. on the evening after operation, the temperature has been normal throughout. On examination

the wound was found healed *per primam*. Applied collodion and a binder. Patient left hospital on Sept. 22d, i. e., sixteen days after the operation was performed.

THE SURGICAL TREATMENT OF DISEASES OF THE UTERINE ADNEXA.

By J. ADRIAN GOGGANS, M.D., Alexander City, Ala.

Member of the Board of Medical Examiners of Tallapoosa Co., Senior Counsellor of the Medical Association of the State of Alabama, Fellow of the Southern Surgical and Gynaecological Society, Fellow of the British Gynaecological Society.

During the past few years more rapid strides have been made in this department of surgery than in any other, and it would be a waste of time for me to attempt to prove the necessity of operating in many cases where tumors exist, consequently, I will pass to the consideration of those cases where there has existed, up to the present time, some doubt as to the treatment which should be adopted. One of the principal sources of doubt is brought about by the fact, that the differential diagnosis in many cases is very difficult, and in some, indeed, quite impossible; nevertheless, I am persuaded that we have arrived at that degree of diagnostic skill at which we can almost invariably determine whether an operation is demanded. In other words, I do not believe that it is absolutely necessary in many cases of disease of the uterine adnexa in which operations are demanded to map out every pathological condition that may be present.

The three principal symptoms of gross disease of the adnexa should never be lost sight of. These are first of all, *recurring attacks of pelvic peritonitis*, from which the patient rarely recovers entirely; second, *hemorrhage*, which may be profuse and irregular; third, *pain*, which is generally most severe in the pelvis. In spite of all palliative treatment such patients become more and more prostrated. In fact, they are usually made worse by the use of pessaries and intra-uterine applications, especially after the use of curette. *Relief only comes after the removal of the uterine adnexa.*

The following case will illustrate these symptoms very forcibly. Patient, thirty-five years of age, has had three children, the youngest now five years of age; has had irregular hemorrhage for eight years. For the past two years I have treated her by the usual method and relieved her of a retroversion by the application of a pessary. During my absence last year, she was treated by Dr. Coby. I finally used the curette once more, but was convinced that the

endometrium was healthy. The ovaries were still prolapsed and tender. I then opened the abdomen and performed Tait's operation. Each ovary contained two cysts of bloody fluid.

Now, the principal symptom for which this patient sought relief, was hemorrhage. Though she suffered much pain in the head, as well as in other parts of the body, she was well within three weeks, and has now the normal sexual appetite, with a seemingly atrophied uterus and no return of the menstrual function.

I am aware of the fact that there are many cases of prolapsed and tender ovaries which are amenable to palliative treatment. I will cite a case: Patient, twenty years of age, married; six months before I saw her she sustained a fall which was followed by pain in the pelvis. For the past three months she has had many convulsions; now has profuse leucorrhœa and pain during sexual intercourse. One ovary found in Douglas' pouch enlarged and tender. The ovary was elevated and kept up by the use of tampons saturated with a solution of ichthyol and she made a good recovery.

The following case was cured by aspiration:

Patient, aged thirty years, married; never had children; temperature 102°; had retention of urine and could not evacuate the bowels. The vagina was hot and painful and a fluctuating tumor occupied the pouch of Douglas. Removed by aspiration eight ounces of a thin straw-colored fluid, when she evacuated the bowels and emptied the bladder. From this time on she made a perfect recovery.

I am not in favor of removing the uterine adnexa for mere symptoms, such as dysmenorrhœa, and the neuroses (I mean as a rule). I would only operate in such cases where the surgeon can actually locate the disease by putting his fingers on something which he knows causes serious symptoms.

I make it a rule to *regard all patients who are constantly incapacitated from pain with surgical suspicion.*

Another factor which has much weight with me, is whether the patient is dependent upon her labor for her sustenance. A poor woman demands the removal of the adnexa much earlier than the rich.

Now, the principal signs which indicate that an operation should be performed are:

1. Those attending pelvic peritonitis accompanied by tortuous and distended tubes, which may usually be felt in Douglas' pouch behind the uterus. This condition may be preceded by the history and symptoms of an abortion, a gonorrhœa, or a tubal pregnancy.

2. The physical signs of enlarged ovaries due to chronic abscess.

3. The physical signs of prolapsed and tender ovaries, accompanied by irregular hemorrhages and incapacitating pains.

4. Some few cases where dysmenorrhœa is the principal symptom, with a probability of its being kept up by chronic disease of the ovaries and tubes.

5. Where hemorrhage is the principal symptom, accompanied by the ordinary signs of grave pelvic disease.

6. In a few cases of general peritonitis preceded by the symptoms of rupture of a pre-existing pelvic abscess, ovarian abscess, pyo-salpinx, or abscess in appendages developed during the progress of puerperal septicæmia.

Much has been said about "unsexing a woman." Now, all women who are thus incapacitated are already unsexed, and nothing is more disagreeable to them than sexual intercourse. From observations made both in this country and in Europe, I am firmly of the opinion that the removal of the uterine adnexa in such cases as I have described, in no way changes such patients, except for the better. Their instincts and propensities remain the same.

AN IMPROVEMENT ON URETHROTOMES, ESPECIALLY OTIS'S INSTRUMENT.

By R. R. WALKER, M.D., Paris, Tex.

In offering and presenting this improvement to the profession, for its consideration, I will give my experience with Otis's urethrotome, also the difficulties met with in the use of his instrument in the operation of internal urethrotomy.

All of us have to deal with these cases, and they present such a wide difference that no two cases can be paralleled. We will take it for granted that this is the recognized procedure for organic strictures of the male urethra. We have no instrument that surpasses Otis's in this operation, and the only fault that can be found with it is its want of certainty. We are all familiar with the operation of internal urethrotomy, and I will not enter into details here.

I will quote from a recognized author, who, in one of his lectures before a class, under the subject of division of strictures, says: "The glans penis is grasped between thumb and finger of the left hand and held in the same position as when the stricture was located. The instrument is then carried to the rubber ring, which had been previously measured on the sound or urethrometer, etc."

Now, it is the italicised words that I wish to emphasize, as they explain why the improvement was made.

All who have performed this operation have doubtless felt some uneasiness, as to whether the division had been made at exactly the located constriction or not; in other words, if we have been sufficiently exact in dividing the stricture at the right place, or have only partially done it.

I would like to state here that no matter how many times this operation has been performed, it can never be done with that degree of certainty which all surgery demands, with either Otis's or Banks' instruments.

Below I give the improvement that I have made on Otis's instrument, together with an extra shaft that can be used as any ordinary sound or locator; the *bougies a boules* can be screwed on to the end of the shaft.



Above will be noticed the Otis instrument with the concealed blade and a blade withdrawn; the Otis has a bulb screwed on to the end of the instrument. These bulbs can be had of any size ranging usually from Nos. 8 to 40 French. Below is the shaft with bulb, which can be used without the urethrotome, in testing for a stricture, as in ordinary usage.

I show also the attachment of Dr. Gouley's instrument for following a whale bone guide.

As will be seen this improvement renders the operation much more simple, and certainly much more precise, for after attaching the bulb (largest size) to the urethrotome, introducing and locating the stricture, we are ready to do the operation without removing and introducing another instrument. And when the constriction has been divided we are always sure that we have gone below the stricture. I give this improvement to the profession, and add that to me it has been a boon that has relieved me of much uneasiness and uncertainty. I have used it several times since it was completed and find that it meets all my purposes.

In an instructive paper (*Internat. Med. Magaz.*) Dr. T. A. McGraw states that there is much to study in the technique of the operation of bone-grafting. We may question whether first, young or old bones, or even cartilage, might be best adapted for this purpose; second, which of the animals would yield the most satisfactory results; third, whether this process would be most likely to succeed in young or old patients, and what effect, upon its success or failure would be exerted by various morbid conditions, such as syphilis, tuberculosis.

Clinical Department.

CRUSHED FINGER—EPITHELIOMA OF THE LIP—CONTRACTED TENDON.

BY ROBERT H. M. DAWBARN, M.D.

Professor of Surgery at the New York Polyclinic, etc.

The first patient was a man, aged 30, who had the end of the ring finger of his right hand crushed so severely that the bone protruded through the wound. The operator said that if he had had to deal with a case like that a few years ago, he should have removed the bone to the extent of a half inch or so, and have made a deep flap operation to close up the denuded surface. It is known now that under aseptic precautions healing can be brought about by a process of granulation, and that from the end of the bone itself granulations will spread out to cover it up completely. In the majority of these cases the patient will have a good serviceable finger. Dr. Dawbarn believed the class would agree with him as to the practicability of this procedure in this instance.

The second case also presented some features of general interest. The patient was a man, fifty-five years of age, who had been operated upon by Dr. Dawbarn for cancer of the lower lip. He had formed an entire new lip and the result was entirely satisfactory. The lip, as in this instance, would be tight for the first few months, but it is wonderful how these lips thin out and yield, so that no one could know at the end of five or six months that an operation had been performed. At the corner of the mouth there was some granulation tissue, but that would all disappear in two or three days more. The technique of the operation was that known as Malgaignes.

The after-treatment in cases of this kind consists in keeping the parts at rest and feeding the patient for the first few days, by the rectum. In dealing with cases of hare-lip, it is essential that the wound be kept absolutely at rest, and in young children who have been operated upon for this trouble, rectal feeding may be combined with inunctions of hot cod liver oil. The operator stated that eleven years ago, when he was house physician at the Nursery and Child's Hospital of New York, there was an epidemic of infantile diarrhoea, and he was satisfied that he had saved life in many cases by the free use of hot cod liver oil. He used cod liver oil, as hot as the hand could bear, and rubbed it steadily and gently over every part of the body, with the exception of the abdomen, for from a half hour to an hour three times a day. In that way he was able to rub in from a half

ounce to an ounce of the oil. It was almost impossible for a child to starve to death with such nourishment. If the child could not take food by the mouth they should keep up life in some other way, and why neglect this most important and practical way of supplying nutriment.

The next patient was suffering from a contracture of the middle finger of the right hand, so that he could no longer use the finger to advantage. The lecturer related the case of a child he had treated for divided tendon some years ago. While playing with a looking glass and hammer, the child broke the glass, sustaining a deep wound in the root of the little finger. The mother called in the nearest doctor who treated the wound, which healed in about three weeks. Later she noticed that the child was unable to grasp with the finger, and called the attention of the doctor to it, who said it was the result of a faulty habit. The case was referred to Dr. Dawbarn, who made an incision in the finger two inches in length, so as to find the proximal end of the tendon. Having found it he had great difficulty in bringing the two ends together. He therefore excised a piece of the sinew from the hind leg of a domestic cat, large enough to fill the defect in the tendon, and stitched it to the divided ends. No drainage was employed, but the wound was dressed under due aseptic precautions, and a plaster of Paris dressing applied, which was removed a month later. In this case the procedure proved successful, though in most cases where the tendons of the lower animals have been transplanted, the method has not succeeded.

What should be done in this case if difficulty was encountered in bringing the ends together, was to split off an inch or so of the tendon and fill up the gap in this way by uniting it with the divided edges. An analogous line of treatment has been practiced in bone surgery, as in the case of a fractured tibia, where a gap is left between the broken ends of the bone.

In this condition we may carry the incision a little further down the tibia, strip off the periosteum for two or three inches, and with the chisel and mallet remove a sufficient amount of shavings from the tibia to fill up the gap in the bone. These chips of bone will consolidate and form healthy living bone, restoring the continuity of the limb. Macewen, of Glasgow, has shown that the periosteum is not essential to the life of a bone.

The operator then cut down on the finger exposing to view the tendon which was firmly bound down by old adhesions, but wholly unimpaired in its continuity. The adhesions were entirely removed and the wound in the hand closed with sutures. The patient will be instructed to employ passive motion of the hand after two weeks, as it is probable the original con-

traction was mainly due to neglect of this measure. The hand was dressed, the tendon being relaxed as much as possible, so as to avoid the recurrence of this complication.

BARTHOLINITIS—URETHRAL CARUNCLE.

BY G. M. TUTTLE, M.D.

Professor of Gynecology at the College of Physicians and Surgeons, New York, etc., etc.

The first patient I show you to-day is a woman, aged thirty-five, who has been married five years. She has had three children, the last being born two months ago. She has had no miscarriage, but is irregular in her menstruation, having a profuse flow which lasts four days. She complains of backache and pains in the groin.

In this case there is a well-defined reason for that backache and pain. The intervals between her pregnancies were not of sufficient length to allow the uterus to come down to its normal size. If pregnancy comes on before the uterus has had time to undergo this metamorphosis, the organ remains permanently large, and to this enlargement we have given the name, subinvolution. In the text books it is stated that the uterus requires two months to attain its normal size, but in my opinion, it takes fully three months before this process is accomplished. I tell you this by way of preface, for this patient does not come here for treatment of the subinvolution, but for another and totally different reason. I think that even at a distance you can recognize the characteristic signs of a not infrequent external genital disorder, which is the subject of so much annoyance and distress to the patient as to give it a sufficient degree of clinical importance. Hardly a week passes that a patient does not enter the hospital complaining of certain troubles about the external genitals. The lower part of the labia majora are here very much enlarged and inflamed, the right labium somewhat more so than the left. There is also a very distinct engorgement of the vulvar orifice—a pudendal varix. On the left side the labium majus is the seat of a soft and elastic enlargement, and on the right side there is a very decided round swelling.

We have here, then, the characteristic appearances of an affection of the glands of Bartholini. The differential diagnosis of this trouble is made partly from the history and partly from the physical signs. The course of an inflammation of Bartholini's glands is usually either very acute or very chronic. When I say very acute, I mean that there is a catarrhal affection of the glands followed by a retention of the

secretion and a rapid development of purulent inflammation. These cases, however, run a very short course, and you can exclude this trouble in the patient before us.

A patient with gonorrhœa or vulvar vaginitis of obscure origin, all of a sudden notices a painful lump at the external vulvar orifice. This breaks in a few days, and after it has undergone this change, ceases to attract the patient's attention, but continues to pour out pus for a considerable time. This is the least common form of the affection. The more common variety is the one before us.

This woman came here two years ago and I showed her to you as a typical case of cyst of the vulvo-vaginal gland. The cyst was opened, and I said at the time it would redevelop, which it has done. In women who have borne children, you will notice, as a rule, a little red dot on either side of the carunculae multiformis. Surrounding this there is a slight radiation of little red lines; these are the openings of the glands of Bartholini. They open just behind the remains of the hymen and into the mucous membrane of the vulvar outlet. They mark the end of a duct which is about three-quarters of an inch in length and is narrow where it enters the vagina. On either side, buried deeply in the tissues of the labia majora, there is a compound racemose gland, lined with cuboidal epithelium and secreting a mucus like the secretion of the prostatic gland. You can see how prone that gland is to become the seat of disease. A catarrhal process starting in the vagina may enter the mouth of the gland, and give rise to an acute inflammation of the gland on either side, with the characteristic signs of a gonorrhœal affection. After it has spread to the gland, the mucous membrane puffs up, becomes oedematous, and the secretion becomes irritating. If the mouth of the gland becomes plugged the secretion is retained and rapid dilatation of the duct takes place. You can see how we get a condition analogous to that in this case. These glands lie between the two layers of fascia. On the vulvar side there is nothing to prevent the gland as it becomes distended, from pushing towards the vulva. I have never seen a hernia of the labium, a varicocele of the vulvar vessels, or hydrocele—in fact, I have never seen anything that encroaches on the vulva as much as the condition before us. The glands that become plugged in this way do not, as a rule, contain pus. A great many prostitutes, early in life, after contracting a gonorrhœa, suffer from a Bartholinitis. They have an abscess which breaks, and is very apt to open into the duct itself. Even after they are entirely well of their trouble you can see a stream of greenish-yellow pus issue from the side of the duct where the abscess has broken. These

women remain thus infected all through their lives, and it is exceedingly difficult to cure this trouble. These are exceptional cases; cases of cystic disease are the common ones. The characteristic signs of such a cyst are as follows: It is quite freely movable, but only towards the vagina. It is, as a rule, not very sensitive, but this varies somewhat. It may interfere with sexual intercourse and with locomotion. It causes a secretion that irritates the external genitals and leads to pruritus. In examining such a case as this, with a view to treatment, always make up your mind that you are not dealing with a hernia.

Now, a word in regard to treatment. This case is an example of a form of treatment that is not the best. I incised this cyst with a knife on its inner aspect, and the result was that it closed again. If you open a retention cyst anywhere in the body and make an incision, you may expect the wound to close together again. There are two ways of treating this affection; one is to put this patient under an anaesthetic and cauterize the gland. The other is to catch hold of the mucous membrane with forceps, and then by means of scissors, remove a round piece no larger than a ten cent piece, of the mucous membrane over the gland. Then you will see a white, shining sac, which is the sac of the gland. You raise this up with a tenaculum and remove a correspondingly large piece from the sac. You then have a hole in the sac and the secretion pours out. Then take a surgical spoon or a sharp curette, and scrape the inside of the sac and pack it with iodoform gauze. Put on a simple dressing and the patient will be cured.

The next patient is a thin, broken-down woman, of middle age, who makes no particular complaint except of generally poor health. Three months ago she had great irritability of the bladder, so that she had to get up at night to urinate. Since then there has been a constant irritability of the bladder, so that she has the desire to pass water all the time, and yet when she does pass it there is a tenesmus of the bladder with very severe pain. After voiding a few drops there is an immediate desire to pass more, and she has lost health and strength. The urine now dribbles away involuntarily. This all occurred in three months.

As I show you this patient you can see, I think, a very striking lesion at the entrance of the meatus urinarius. It is a bright, red spot about the size of a split pea. As I brush over it with a soft piece of cotton on a probe, the woman complains of the most excruciating pain.

We have here to deal with a urethral caruncle, which is a hypertrophy of a portion of the mucous membrane in the meatus urinarius. This does not seem in itself to amount to much, but it has rendered

this patient unfit for anything and has led to almost a condition of melancholia. It is made up of a connective tissue basis, and has a most remarkable blood supply. You will see very few women who have not a little rolling out of the mucous membrane of the urethra, but you will not find the same sensitiveness as in this case. In other words the differential diagnosis between urethral caruncle and prolapse of the mucous membrane is the presence of sensitiveness.

The treatment of this condition may be summed up in a few words. It can be cured in a few seconds. You put this woman on the table, catch this little mass with a forceps, draw it out well and remove it with a Pacquelin cautery knife. Another way is to draw it out and tie a small ligature around it, or you may cut it off with a dull scissors and touch the base with a caustic. Any of these methods will do. It is never well to cut out a caruncle and promise a cure without first inspecting the urethra a little further up, when you may find two or three more. In any operation about the female urethra, it is never wise to remove too much mucous membrane, for by doing so you may give rise to retention of urine and bladder trouble.

EPITHELIOMA; DUPUYTREN'S CONTRACTION.

By WILLIAM T. BULL, M. D.

Professor of Surgery at the College of Physicians and Surgeons, New York, Visiting Surgeon to the New York Hospital, etc.

The first patient is a male, sixty four years old, who presents with a small growth on his right ear. Three years ago a small pimple appeared, which continued to enlarge and which the patient irritated by scratching. It is now quite tender to the touch, and at times he complains of a shooting pain passing through the head and back of the ear. The growth is movable on the cartilage of the ear, is considerably elevated above the surface, and surmounted by a dry crust beneath which is an ulcerating surface. There are no enlarged glands back of the jaw. It is important that we should palpate this growth to get an idea of its characteristic hardness. This is very important in arriving at a diagnosis of this condition.

Considering the age of the patient and the history of the growth, the diagnosis in this case is one of epithelioma. Assuming this diagnosis to be a correct one and that this is an epithelioma, which is one form of cancer affecting the skin, what else might it be? Might it not be a wart? Now, the characteristic difference between a wart and an epithelioma are these. A wart is usually not painful and does not ulcerate. It does not increase in size, is not hard

to the touch and frequently disappears of itself. Furthermore, a wart is more circumscribed than an epithelioma and does not shade off into the surrounding tissues, as does this. If you soften a wart with an alkali you can with very little pain to the patient shell it out from its bed by means of a small spoon, but this you cannot do with an epithelioma.

These distinctions are of the greatest importance and sufficient to enable you to tell the difference between an epithelioma and a wart. Very frequently an epithelioma starts as a wart and later assumes an epitheliomatous character. If this man told you he had a wart at the outset, it would be a good clinical point of practical significance. When you find a wart on any portion of the body that has commenced to ulcerate and is subjected to any irritation—when, I say, you have those changes beginning to occur which are suspicious of a development of epithelioma, when you find this ulceration is very trifling and slow, with a small amount of pus secretion, a scale forming, which after patient picks it off forms again, it is time for you to realize you are dealing with something, more than an ordinary wart, even though pain, infiltration of the surrounding part and more active ulceration be absent.

As the best means of treatment excision of the growth is to be performed. Make a very wide removal, and be sure you cut beyond the growth and excise a little of the cartilage of the ear. A slight deformity at his time of life in this man's ear would not be regarded as a serious objection. This form of cancer of the skin is very common about the face in people past middle life. It does not always begin as a wart; it may begin as a thickening of the papillary layer of the skin and also of the epithelial layer, so that patients think they have a little scab or collection of sebaceous matter. The true character of the tumor becomes finally manifest. There is no form of neoplasm that can be treated with more success by the surgeon than this growth, nor is there any form so persistently neglected by the physician. Hence, it is of the greatest importance to you to realize that we have here a disease capable of destroying life, which at one period in its career has so slight a hold upon the individual that the removal of a very trifling fragment will put an end to it for good.

Now, there is another point I would mention in regard to this, and that is in reference to the plan of treatment. I saw a man of this patient's age, the other day, who had one of these little thickenings on the side of the nose and came to ask me if it should not be cut away. He said a doctor had been trying to burn it out, and he thought he could have got rid of it a great deal better if it were cut. I believe the caustic treatment of epithelioma is wrong and I am

sure of it. When you see anyone treat epithelioma by caustics, you may be sure he is treating it unscientifically, more painfully, and generally less satisfactorily than by the knife. I do not mean to say you could not destroy this growth by means of a caustic. You can do it. You can take a galvano-cautery wire and destroy it very thoroughly, which is a very effectual means of curing it, but it would be a barbarous and cruel way of doing it. But think of putting a little caustic paste on this neoplasm, a little more three or four days later, and so on, and telling the patient it does not hurt! The patient goes away with the sensation that it does hurt, and at the end of a certain time the epithelioma is destroyed. During that process of destruction, however, there is great danger that the deeper layers of the neoplasm may grow more rapidly than the caustic can overtake them. It is also likely that its cellular elements may be incited to migrate, and they may find their way into the lymphatic channels and into the next chain of lymphatic glands, the cancer spreading into the interior of the body. I had an opportunity in the course of a year, to see half a dozen people treated by caustics, who were pleased beyond measure to think that they did not have anything cut out, but every one of them had cancerous infiltration of the glands beneath the jaw or in the neighboring parts. There is so much that is harmful in the treatment of cancer by caustics that I think it a pity that physicians who are honest and sincere in their convictions, and who are recognized by the profession, will not learn what is the best method of treating this affection.

As you will be able in the future to express an opinion to the laity upon this subject, I hope you will pardon this digression on my part.

The next patient is a man fifty years of age, who gives us the following history: Twelve years ago the little finger of his left hand began to be drawn up, and this contraction gradually increased, until now he presents the characteristic condition you see. The change that has taken place is a contraction of the palmar fascia on that side of the hand, which is known by the name of Dupuytren's contraction. It at present affects only the little finger, but the patient calls attention to the fact that one of the other fingers is beginning to be similarly affected, because he feels a hard and nodular swelling in the fascia of the other finger.

Now, there is something more than a shortening of the fascia here; there is a thickening and change in consequence of which it becomes harder. If you cut down upon this layer of fascia, you will find that it has lost its shining character and has become converted into an irregular band of tissue resembling white fibrous tissue. That is the change which takes

place in this part of the body in people who are past middle life. It has been attributed by most surgeons to changes which occur in connection with the rheumatic or gouty diathesis; and by others to some nervous influence. There are grounds for belief in both theories.

If we had any means of relieving this condition except by an operation, it would be desirable. It is possible and desirable to get rid of this trouble by making a number of transverse incisions and straightening out the finger. A cure would probably be obtained in this way. This is known as Adam's operation of dividing the contracted band of tissue subcutaneously. If done with a very small knife and care is taken not to cut too deeply into the hand, the contracted tissue can be divided satisfactorily without fear of injuring any other parts. This operation has been successfully performed in a large number of cases and has been reported on favorably by many surgeons in this vicinity. It does not always give satisfactory results, however, and I think it is inferior to another method of treatment which consists in dissecting out every portion of the newly formed fibrous tissue or hypertrophied palmar fascia. This can be done with greater assurance of permanent success than any form of subcutaneous operation. I have performed this operation a number of times myself, and it is quite painless, except for the introduction of a needle carrying a solution of cocaine. The anaesthetic is injected along the line of the proposed incision, which is carried down to the hardened tissue; the fascia is removed entire from one end to the other and the finger is straightened. If the operation is done with proper preparation of the hand, and strict antiseptic measures are resorted to, in five days the parts will have recovered their normal mobility, and the result will be most gratifying. That is the very best way of treating this case in particular, and the best means of treating the affection in general.

Tuberculosis of the Epididymis.—In six cases Dr. Karelowski has seen tuberculosis of the testis as a sequel to gonorrhœa. In four of these there was a formation of circumscribed tumors in the epididymis. Inasmuch as tuberculosis of the testis has a tendency to rapid extension and soon involves the spermatic cord and prostate gland, castration should be performed as early as possible. Karelowski has repeatedly removed both testes in children and observed no recurrence of tuberculosis after a number of years—in one case even after ten years. In cases where there is suspicion of syphilis, specific treatment should be first tried. In one of his cases which presented the features of tuberculosis, a cure was effected by specific treatment.—*Deut. Mediz. Zeitg.*, Nov. 14, 1892.

Abstracts and Selections.

A NEW METHOD OF EXCISING THE TWO UPPER PORTIONS OF THE RECTUM AND THE LOWER SEGMENT OF THE SIGMOID FLEXURE.

By H. WIDENHAM MAUNSELL, M.A., M.D.,
New Zealand.

The following operation is recommended by the author, first, in cases of cancer of the upper two-thirds of the rectum and the lower segment of the sigmoid flexure; second, cases of tertiary syphilitic ulcerations of the middle and upper portions of the rectum not amenable to medical treatment; third, procidentia recti; fourth, congenital absence of the anus and lower portion of the rectum.

1. For a few days previously to operating the patient is fed with small quantities of farinaceous food and beef tea.

2. Night and morning the stomach and lower part of the rectum are thoroughly irrigated with hot water and salt (half a drachm to the pint).

3. The lower portion of the rectum and anus below the carcinoma is cautiously dilated with a small Barnes's bag or bi-valve vaginal speculum, well greased with iodoform ointment.

4. The patient is kept in bed, and the surface of the abdomen and perineum is rendered thoroughly aseptic with nail-brush, soft soap, shaving and bi-chloride solution. Previously to operating, the limbs and upper part of the chest are covered with wadding and the patient placed on a portable rubber operating mattress filled with hot water.

5. When thoroughly under the influence of an anaesthetic the patient is placed in the lithotomy position.

6. The assistant surgeon sits at the end of the operating table. He first divides the sphincter ani backwards towards the coccyx with a straight probe-pointed bistoury and then passes a large bi-valve vaginal speculum or Bruce Clarke's three-bladed speculum, through the anus up to the cancer. Holding the speculum in position he cautiously dilates the lower end of the rectum. The free division of the sphincter ani prevents the subsequent distension of the rectum with flatus and the possible tearing out of the circumferential sutures.

7. The bladder is now thoroughly emptied and a median abdominal incision is made down to the peritoneum from a point one inch above the umbilicus to the pubes. All bleeding having been stopped, the peritoneum is slit up to the size of the external wound.

8. The edges of the wound are separated with a steel wire laparotomy speculum and the diaphragmatic intestinal retractor, formed of a wire framework four inches wide and seven or eight inches long, covered with two or three layers of aseptic gauze, is placed in position. With a long-handled, slightly curved needle with an eye near the point, two silk sutures are passed which are attached to the lower corners of the wire frame out through the walls of the abdomen on either side, immediately above the crest of the ilium and two or three inches externally to the outer border of the quadratus lumborum. The portion of gut to be operated on is isolated, and the rest of the intestines are lifted out of the pelvis and tucked securely above the lower rim of the wire frame. The sutures are made taut and fastened to the laparotomy speculum. The diaphragm keeps the intestines warm and well upwards and backwards out of the pelvis. The operator has an unobstructed view of all the pelvic organs and is master of the situation.

9. If there is an accumulation of faeces above the cancerous stenosis, it is gently pressed back into the colon with the fingers and thumb. The displacement of the faeces from the vicinity of the seat of operation greatly facilitates the subsequent artificial invagination of the diseased segment of gut.

10. With a long packing needle a piece of broad tape is passed through the proximal side of the cancer, first on one side and then on the other; the assistant then drags the ends of the tape out through the speculum with a sequestrum forceps. The broad loop of tape now lies across the proximal side of the diseased segment of gut.

11. A small incision with a tenotomy knife is made through the entire thickness of the peritoneal fold between the rectum and bladder in the male or the rectum and uterus in the female. The upper part of the rectum, held between the finger and thumb of the left hand, is drawn out from the sacrum so as to render its peritoneal attachments taut. A pair of long probe-pointed angularly curved scissors, is passed into the opening made with the tenotomy knife and the peritoneal attachment of the rectum is completely divided, first on the left side and then on the right. During the division of the lateral reflexions of the peritoneum it is imperatively necessary to keep the probe point of the lower blade of the scissors pressed well upwards and outwards from the median line of the gut against its inner surface. In this way, and in this way only, it is possible to divide the peritoneal duplicature which forms the meso-rectum without injury to the vessels, nerves and lymphatics of the rectum.

12. Provided the lower portion of the rectum is sufficiently dilated with the speculum, there is now

no anatomical impediment to the invagination and complete prolapse of the upper three-fourths of the rectum out through the anus. The loose cellular tissue, with its contained vessels, offers no resistance. One or two vessels may be accidentally injured, but these can be easily dealt with in the usual way. No more of the peritoneal reflexion should be divided than is absolutely necessary to permit of the invagination out through the anus. The method I have advocated for peritoneal detachment applies with equal force to all parts of the colon. The inner reflexion of peritoneum requires most care in division, as the vascular supply of the gut comes from that side. As the prolapse is drawn well down, the blades of the speculum should be slightly approximated so as to permit of their easy withdrawal from the anus.

13. A catheter should be passed into the bladder to make certain that it is absolutely free.

14. The prolapsed bowel is washed with warm, very dilute bichloride solution and a small incision made with a tenotomy knife through the entire thickness of the returning or middle layer of the intussusception and as near its apex as the disease will safely permit. The probe-pointed angularly curved peritoneal scissors are passed in through the opening made with the tenotomy knife, the prolapse being cut all round so as to completely free the entering or inner layer.

15. The inner layer is now pulled down with a vulsellum forceps until all the diseased portion appears completely outside or below the cut border of the returning or middle layer.

16. The inner and middle layers of the intussusception, about an inch above the disease, are transfixed with two fine long straight needles armed with chromicised gut.

17. The entering or inner layer is now amputated a full half inch above the cancerous mass. Transfixing with long needles the entering and returning layers of the intussusception previously to amputation of the cancer, prevents it from flying back inside, and insures the proper relative position of the different layers of the bowel previously to sewing them up. The cancerous mass having been amputated, the needles are passed through and the sutures picked up in the middle of the invaginated bowel, divided and tied on both sides; the ends of the four sutures left long, so that an assistant can hold the cut ends of the bowel in position until it is plugged with absorbent wool previously to completely suturing it up circumferentially. Twelve passages of a long straight needle through both sides of the gut as above described, suffice for the introduction of twenty-four sutures, which are generally sufficient. Nearly half an inch of the entire thickness of the coats of the gut should be included in each suture.

18. Before cutting off the four long sutures, the plug of absorbent wool is removed, the wire intestinal retractor loosened, and a long tube is passed up the colon, which is washed out thoroughly with hot water and boracic or salicylic acid. All hardened faeces should be assisted along the colon by the fingers and thumb within the abdomen.

19. When the whole colon is thoroughly irrigated, the sutured ends of the bowel should be dried with absorbent wool and painted over with Wæfler's mixture of alcohol, glycerine and colophony, the same that he applies to the surface of the raw stump after removal of the tongue. The whole of the prolapse is now insufflated with iodofrom and amorphous boracic acid and the bowel gently returned. The return of the circumferentially sutured bowel is facilitated by slight pressure from below and gentle traction from above. The rectal peritoneal reflexion which was divided, is now sewn up with a few interrupted sutures to prevent any subsequent prolapse of the gut.

20. The laparotomy speculum and intestinal retractor are next removed and the median abdominal wound sewn up.—*Lancet.*

INTRA-LIGAMENTOUS ELYTROTOMY AND ITS INDICATIONS.

BY DR. BOISLEUX.

The author states that some cases of fixed retroversion of the uterus cannot be cured by massage, and that occasionally forcible rupture of the adhesions during anaesthesia proves unsuccessful. In these cases direct access to the fixed adhesion may be gained by opening Douglas' cul-de-sac, and they can then be separated.

In performing this operation injury of the utero-sacral ligaments must be avoided, and hence a transverse incision is impracticable. A median incision is made in the posterior vaginal vault, commencing about one centimetre behind the cervix, by which the place where these ligaments cross each other at the uterine neck is avoided. These ligaments are of importance, since when they become shortened the uterus is drawn forward, while if elongated prolapse results. If the posterior lip of the cervix is drawn upward, these ligaments can be felt as tense bands, between which lies Douglas' pouch.

After careful cleansing of the vagina the uterus is curetted, and then for a period of five minutes positive galvano-cautery with Apostoli's hollow sound is practiced. This serves to remove exciting causes of inflammation in the uterine cavity, into which a strip of iodofrom gauze is inserted.

To prevent prolapse of the intestines the pelvis is now elevated, a Sim's speculum introduced into the vagina, and the posterior lip of the cervix drawn upward. Douglas' pouch is opened exactly in the median line, by an incision four to six centimetres long, with the bistoury, while the index finger of the left hand is introduced into the rectum to serve as a guide. After disinfection the index finger is introduced into the wound, while with the other hand the uterus is forced forward; at the same time all adhesions at the posterior surface of the uterus are separated with the left index finger. This is sometimes easy, but sometimes accomplished only with expenditure of considerable force and time.

The middle, as well as the index finger, is now introduced through the opening and the adnexa examined, and if necessary, freed from adhesions. The same fingers of the other hand are then inserted, so that this procedure may be carried out on the opposite side. The peritoneal cavity is next irrigated with a three per cent. boric acid solution, the mucous membrane surrounding the wound freshened to the extent of one centimetre, and the opening closed with two to four silk or catgut sutures.

Above the line of sutures a drain is introduced, consisting of two small tubes placed side by side and united at the upper end by a third perforating tube after the manner of a T. Behind this the sutures are tied. The vagina is washed out with a two per cent. carbolic acid solution and a tampon of iodoform gauze introduced.

The drain is removed at the end of from five to ten days, if no bloody or serous discharge is present. If pus is discharged intra-peritoneal irrigation with a three per cent. boric acid solution is resorted to.

This procedure is not attended with much hemorrhage and has the advantage that if the adnexa are found to be diseased, they may be removed at the same operation. Aside from the seven cases reported by the author, Byford has performed this operation on twelve, and Stratton on fifteen. The results prove that this method is preferable to all others.

Intra-ligamentous elytrotomy is indicated in the following conditions:

1. Adhesions between the uterus and adnexa, or between the latter.
2. For the treatment of movable or fixed retro-deviations of the uterus, as well as for the treatment of pathological antiflexions.
3. In cases of retro-uterine accumulation of pus.
4. In cases of pelvic peritonitis and general acute or sub-acute peritonitis, such as develops after child-birth or menstruation, or in consequence of gonorrhœal infection, or accompanies such affections as tuberculosis.

5. As an exploratory incision, where the diagnosis is doubtful.—*Centralbl. f. Gynäkologie*, No. 29, 1892.—*Centralbl. f. gesam. Therapie*.

THE OPERATIVE TREATMENT OF EPILEPSY.

BY DR. HERMANN KUMMEL, Hamburg.

The author distinguishes from a therapeutic standpoint between genuine epilepsy, reflex epilepsy, and the group of symptoms of traumatic epilepsy which usually appears in form of a cortical epilepsy. In cases of the latter kind, the antecedent injuries of the skull and the consecutive epileptic phenomena afford an indication of the seat of the disease. In the group of reflex epilepsy the cause of the disease is frequently a lesion of the peripheral nerves. In genuine epilepsy, however, we have no means of localizing the lesion in the central organs. Notwithstanding our limited knowledge of the subject, operative procedures of the most diverse kind have been undertaken and recommended from time to time, and this is due to the facts that the disease has so hopeless a prognosis and that the temporary success of some operator has reawakened deceptive hopes of a permanent cure.

It is well known that surgical procedures of the most varied kind performed for other purposes in cases of epilepsy, have sometimes caused an arrest of the epileptic attacks for a time, and even their complete cessation. The cases operated upon by the author were kept under observation, for the most part, for a period of years, so that it is possible to form positive criteria concerning the success and non-success of various surgical measures.

Ligation of the vertebral arteries for the treatment of epilepsy was suggested by Hughlings Jackson, and the first clinical contribution to this subject was made by an English surgeon, William Alexander, of Liverpool. He was followed by Baracz, of Lemberg, Sydney Jones, of London, Bernays, of St. Louis and others. Kummel performed ligation of the vertebral artery a number of years ago on two cases, being induced to resort to this procedure not only by the favorable reports of Alexander, but also by experimental investigations. On the ground of his experiments on animals he was led to believe that in genuine epilepsy the attacks resembled the phenomena produced by irritation of the sympathetic, the stimulus originating from the cerebral cortex, and that by interrupting the paths of communication the sympathetic fibres would be cut off from their connection with the cerebral cortex. According to this view the essential feature of the operation is not the ligation of the vertebral nor the interruption of the blood stream, but rather the constriction of the fibres derived from

the upper sympathetic ganglion, which surround the artery. However logical the author's theory may be, his practical results were disappointing, the operation affording only temporary relief.

Trephining of the skull was undertaken by Kummel only in cases of genuine epilepsy, where a well-defined point of localized pain had been present for some time. By trephining of the painful portions of the skull it was found possible to effect a temporary arrest of the attacks, to improve the general health and the mental condition. These results, however, could not be reckoned upon and were inconstant. Complete recovery was never observed.

On the ground of his clinical experience the author reaches the general conclusion that those cases of traumatic epilepsy in which diagnostic localization of the affected cerebral areas is possible, are accessible to successful operative treatment. The decision of the question as to whether operative measures are indicated in genuine epilepsy must be left to the future?

—*Deutsche Medizinische Wochenschrift*, No. 23, 1892.

A NEW METHOD OF RADICAL CURE OF HERNIA.

Prof. Kocher has devised the following operation: The integument and superficial fascia are divided in the direction of Poupart's ligament and over the length of the inguinal canal. The other tissues are incised down to the canal, which, however, is not opened. At the anterior abdominal ring Cooper's fascia, which covers the spermatic cord (being the continuation of the aponeurosis of the external oblique muscle), the cremaster muscle and tunica vaginalis are cut. The hernial sac is separated by blunt means from the other structures of the cord and drawn forcibly downward. The left index finger is then passed into the inguinal canal, and at the upper angle of the wound, laterally from the situation of the posterior inguinal ring, a small opening is made in the aponeurosis of the external oblique muscle. Through this opening a slender pair of dressing forceps is passed along the index finger (which is at the same time withdrawn) through the inguinal canal and out at the anterior inguinal ring. With the forceps the base of the hernial sac is grasped and drawn up through the inguinal canal and out at the narrow opening. The sac is now forcibly pulled sideways and firmly twisted; but instead of being excised, is placed upon the outer surface of the external oblique aponeurosis in the direction of the inguinal canal, toward the anterior inguinal ring, and forcibly stretched. In this position it is secured above and below by deep sutures, which pass above the twisted sac through the oblique fibres of the aponeurosis of the external oblique and the underlying muscular fibres of

the internal oblique and transversalis, perforating the sac and beneath it Poupart's ligament. These sutures, five to seven in number, also close the pillars of the anterior abdominal ring, to which the lower end of the hernial sac is secured. If the sac is long and projects beyond the anterior ring, a portion is excised. In this manner the author forms a resisting plug over the entire length of the inguinal canal, which is the most efficient safeguard against the pressure of the intestines. The peritoneum is also drawn sideways, stretched, and firmly pressed to the abdominal wall, and closed both by torsion and deep sutures. A similar procedure was employed by the author in crural hernia. The sac was completely freed from adhesions, twisted as firmly as possible and drawn through a small opening above Poupart's ligament, being utilized for occluding the crural canal by a suture including the pectenial fascia and Poupart's ligament.—*Correspondenz-Blatt f. Schweiz Aerzte*, Sept. 15, 1892.

RESECTION OF THE URETHRA IN CASES OF TRAUMATIC STRIOTURE—ARTIFICIAL URETERAL MEATUS.

Dr. E. Vignard (*Arch. provinc. de chir.*) reports two cases of traumatic urethral stricture in which Heurtaux successfully resorted to resection of the constricted part. In the first case the stricture was due to a fall upon the perineum. Five weeks after the injury Heurtaux resected a portion of the urethra one and one-half centimetres long, and united the two urethral ends directly by sutures. After introduction of a catheter into the urethra he closed the wound of the soft parts with *etage* sutures, without employment of drainage. A small fistulous opening resulted through which a few drops of urine escaped for a short time, but this soon closed spontaneously. Recovery ensued without further trouble, and five weeks later the urethra admitted a good-sized bougie.

Vignard regards resection as the most available treatment for traumatic strictures, inasmuch as the lesion is usually sharply limited and other methods are either useless or followed only by temporary success. In cases of impermeable traumatic stricture he regards resection as the only rational procedure; for non-dilatable strictures it is the operation by choice; in those which admit with difficulty of dilatation, it should at least be suggested to the patient.

A review of the fifteen cases thus far operated upon by this method shows that the resected ends can usually be coapted without difficulty. In one case reported by von Wahl, a small triangular defect remained at the lower urethral wall after suture. Vignard considers it essential to unite the soft parts between urethra and integument accurately by sutures;

as a rule, drainage is not advisable, but occasionally a small drainage tube may be introduced. A retention catheter should be left in the urethra for the first six days. Subsequent dilatation is not necessary. This method has thus far given radical cures. If, however, marked urethritis or perineal suppuration develops after operation, repeated catheterism may be advisable as such a complication may give rise to a recurrence. Although gonorrhœal strictures are not excluded from this treatment, resection is much less frequently indicated, and only then when the stricture is well localized.

In a thesis Dr. P. Trekaki reports experiments made under direction of Le Dentu, with regard to implantation of the ureter in the lateral or posterior wall of the abdomen. This operation has thus far been performed upon living persons only by French surgeons. Experiments on the cadaver for the purpose of determining the feasibility of the operation were made in 1887 by Prof. Agnew, of Philadelphia, while Trekaki has made a number of experiments on animals.

The author proposes formation of an artificial ureteral meatus as a substitute for nephrectomy in cases where in consequence of the existence of a renal or ureteral fistula or of an injury of the ureter, removal of a healthy, normally functioning kidney is contemplated. He regards the kidney as an organ having so prominent a physiological function that its removal can be justified only where serious disease exists. The removal of a healthy kidney should always be avoided. The operation suggested by the author is indicated in cases of obstruction of the ureter due to uterine cancer or fibroma, or cancer of the bladder, but above all in cases of injury of the ureter. It is contra-indicated, of course, in all cases where the kidney has undergone extensive pathological changes. Implantation of the ureter into the lateral or posterior abdominal wall and evacuation of urine at this place does not give rise to renal infection, as is demonstrated by two clinical observations in the practice of Le Dentu and Gozzi and by the author's experiments on animals. In both these cases after the artificial opening had performed its function well for a number of months, an opportunity was afforded of subjecting the kidney to a thorough histological examination. No deep changes of the renal tissues were found.—*Centralbl. f. Chirurgie*, No. 45, 1892.

THE EARLY EXTIRPATION OF TUMORS.

In a paper read before the New York State Medical Association, at its recent meeting, Prof. J. W. S. Gouley presented the following conclusions on this subject :

1. Malignant tumors exceed benign tumors in frequency.

2. The malignant tumors comprise epitheliomata, sarcomata and internal adenomata.

3. Among the benign tumors myxomata and external adenomata often recur after excision, but do not infect the system.

4. There is no solid benign tumor that may not become malignant.

5. No means are known by which can be ascertained the precise time of the beginning of metamorphic action in tumors.

6. Most malignant tumors have a stage of benignity.

7. Excision of potentially malignant tumors in the early epoch of their stage of benignity is likely to effect a permanent cure, or at least to prolong greatly the period of immunity from recurrence of the disease.

8. In the excision of malignant tumors the greatest care should be taken to remove as much of the ambient tissues, including fasciæ and lymph glands, as is compatible with good judgment.

9. General treatment of tumors has no value except as an adjuvant of a surgical operation, and is often indirectly injurious, leading the patient to expect a cure by persevering in the use of drugs, and thus allowing the disease to make rapid progress toward a fatal end.

10. Local treatment of tumors, by means of escharotic plasters, pastes or powders, is the most fruitful in evil of all the devices for the torture of the afflicted. The plaster, paste or powder, causes the greater part of the tumor to slough, but there is enough left behind for the most rapid extension of the disease. The effect of the escharotic is, therefore, only to till a soil where new growths sprout like so many seeds cast upon rich loam.

11. Compression is delusive in the case of tumors containing cysts, and is directly hurtful by exciting the rapid growth of most tumors.

12. Expectancy, even in the case of benign tumors is as unwise as meddlesome medication.

13. There should be no waste of time in endeavoring to make a precise diagnosis of a particular morbid growth, for after its excision the microscope reveals the nature of its constituent elements and assists in the establishment of the prognosis, which is the question of greatest importance to the sufferer.

14. What is known of the great fatality of tumors of long standing, should induce surgeons to advise the complete removal of all accessible morbid growths as soon as detected, no matter how seemingly trivial or harmless, such as small glandular, fatty, fibrous, and vascular tumors, wenus, warts, moles, etc.

15. As soon after excision and as often as a tumor recurs it should be removed, so long as there is any

possibility of insuring cicatrization of the wound, even by skin-grafting.

16. Medicinal treatment after the excision of malignant tumors is of much value, even if it consists only in the administration of reconstituent medicines.—

N. Y. Med. Journ., Nov. 26, 1892.

EXTRA-UTERINE PREGNANCY.

In a paper read before the International Congress of Gynæcology and Obstetrics, Prof. Martin, of Berlin, presented the following conclusions :

1. The etiology of extra-uterine is still very obscure. The different hypotheses are based only upon a study of isolated cases. The subject will not be placed in a clearer light until the physiology of impregnation is better known.

2. The diagnosis is never positive except in cases where we are able to observe the growth of the foetal sac by external examination, or the intra-uterine formation of the "caduca" without a distinct chorion.

3. The outcome of cases of extra-uterine pregnancy is seldom a regressive metamorphosis (mummification or lithopædion). In most cases the death of the ovum is preceded by a hemorrhage into the foetal sac or into the ovum itself. The blood may be evacuated into the abdominal cavity through the abdominal orifice of the tube (tubal abortion), or there may be a rupture in the continuity of the tube, into the abdominal cavity or broad ligament. This form of hemorrhage is infrequent. In the majority of cases death occurs from anæmia, or peritonitis the cause of which is still unknown.

4. Extra-uterine pregnancy must be regarded as a dangerous neoplasm. The cases in which the foetus develops to maturity, are so rare that if we would save the life of the child the mother's life would have to be sacrificed.

5. For this reason the aim of treatment should be to operate as early as possible in all forms of ectopic gestation. The treatment by morphine injections gives no real cures. The value of electricity cannot be estimated because no case free from criticism has been as yet reported.

In the discussion of this paper Mr. Alban Doran, of London, stated that the original seat of foetal cysts was always the tube. He believed that there were no positive observations showing that the foetal sac can originate from the ovary or peritoneum. Dr. Rein believed in peritoneal gravity, of which he had seen two cases. He would not regard extra-uterine pregnancy as a neoplasm, and thought we were not

warranted in destroying the child in every case. If gestation has been prolonged over one-half of its duration and the child is living, an expectant treatment may be adopted for a time.—*Deut. Mediz. Zeitung*, Nov. 17, 1892.

TREATMENT OF ANEURISM AND OF HÆMORRHOIDS BY HYPODERMIC INJECTION OF BLOOD-CLOT.

By G. K. TURNER, M. D., Morristown, Tenn.

I recently presented a paper on this subject before the East Tennessee Medical Society, but thinking the method shows great promise of usefulness, I send it to your journal for publication also.

As there is no method possible for treating aneurisms that does not involve either clotting of the blood in the aneurism, or obliteration of the artery, there can be no valid objection to *clotting blood outside of the artery*, and *then introducing it* where required, by a syringe and hypodermic needle.

My plan is, after using aseptic precautions, to—1st. Draw blood from the patient's arm, the arm of a friend, or, admissibly, from a beast or bird.

2nd. Clot this blood, or allow it to clot spontaneously.

3rd. Strain off the serum.

4th. Inject at the distal side of the aneurism.

Before puncturing with the needle, deaden the skin with a 4 per cent. solution of cocaine, and fill the aneurism at one injection. It will be well to check the current in the artery before injecting, either by tourniquet or manual pressure.

I propose the same clot injection for hæmorrhoids in place of astringents or carbolic acid, which can do no more than originate a clot. Why not use a clot "at first hand?"

Finally, I wish some one to apply the clot injection into the bleeding mouths of arteries, or probably better, by needle puncture of artery and hypodermic injection above the seat of injury. Should the method be tried on varicose veins, special care will be necessary, as here we have an increased danger from embolism.

Of course aneurisms are, and may be, safely punctured, for this has been done for years when using electricity, and I have had no trouble in passing blood-clot through needles.

I hope such surgeons as have an opportunity will put these ideas on trial and report results.—*Virginia Medical Monthly*, Nov. 1892.

Surgical Memoranda,

Bone Grafting.—In an excellent paper Dr. Mc-Graw reports two cases of bone-grafting, the first of which would seem to demonstrate that it will prove a most invaluable procedure in the treatment of ununited fracture in young persons. We may hope that it will prove equally efficient in causing the rapid healing of bone cavities. It is evident that an important point in securing success is to surround the bone-grafts with living tissue. The more thoroughly they are buried, the more intimately they come in contact with neighboring structures; the more constantly they are kept bathed in nutritive fluids, the greater will be their chances of living, and exerting an active influence on the tissues in which they lie buried; and, on the contrary, exposure to the air, deficient supply of nutritive fluid, and insufficient support must lessen their vitality and their capacity for adapting themselves to their new surroundings.—*Internat. Med. Magazine..*

Suturing of Divided Tendons.—Dr. A. H. Meisenbach states that in order to obtain good results the following indications must be met:

1. The utmost care in carrying out complete aseptic and antiseptic measures.
2. Enlarging the wound to such an extent that a free field for operation is obtained; extensive opening of a sheath, if necessary, to easily catch up retracted tendons.
3. Care in suturing the corresponding cut ends with silk or catgut, preferably catgut.
4. The ends of tendons, if ragged, may be resected, so as to get smooth edges. If not enabled on this account to approximate the ends, with a suture intervening, good results may still be expected.
5. Careful suturing of the sheath with continuous catgut suture, leaving an opening for drainage at the site where tendons are sutured.
6. Appropriate position on a splint, the parts being so placed as to relax the sutured tendons.—*North Carolina Med. Journ.*

Treatment of Fractured Patella:—In a case reported by Dr. Berger, where the patella had been split into two fragments, and union had failed to occur under a plaster dressing, the following operation was resorted to with success :

The opposing surfaces of the fragments were freshened, and then a piece of silver wire was passed around the patella, by first passing it through the quadriceps extensor tendon at its insertion into the

upper fragment, then along one side of the patella and through the upper part of the ligamentum patellæ, when it was fixed to the lower fragment, and thence to the starting-point. The two fragments were thus approximated, and the two ends of the wire fixed together. The periosteum was sutured over the line of fracture, and the overlying soft tissues approximated with sutures. A plaster dressing was then applied. The results were very good, and the movements of the knee-joint were perfectly re-established.—*The British Medical Journal.*

Excision of a Rib for Empyema.—Dr. G. W. McIntyre reports a case of this operation which demonstrates the truthfulness of the following propositions :

1. That many of the symptoms which are supposed to be characteristic of pneumonitis may occur in pleurisy.
2. That whenever an effusion into the pleural cavity is found to be purulent, it is worse than useless to temporize by delaying to make a free opening.
3. That excision of a portion of a rib and opening the thoracic cavity is neither a difficult nor a very dangerous operation, even when the pleural sac is distended with fluid.
4. That owing to the form and position of the ribs it is very easy to cut them with the ordinary, straight bone forceps.
5. That the opening should be made higher than the ninth rib.
6. That one is very apt to meet with unexpected embarrassments in practicing surgery among the insane.
7. That it is best to use antiseptic injections after opening the pleural cavity for empyema.
8. That washing cavities out, first with a moderately strong solution of corrosive sublimate, and afterwards with pure water, may be a useful resource in cases of chronic suppuration.—*Northwestern Lancet.*

Treatment of Cystitis.—Okeo-Blom reports a series of favorable results which he has obtained in cases of acute and chronic cystitis from intra-vesical injections of iodoform-ether-oil solutions, one part of iodoform to seven each of ether and oil. By means of Guyon's instillator, from one to six centigrammes of the solution were introduced into the bladder; these instillations were repeated every second or third day. The pains and frequency of urination were generally relieved by the second instillation. The best results were obtained in acute gonorrhœal vesical catarrh.—*Annal. des Malad. des Organ. Genito-urin.*, August, 1892.

Soft Canulas in Tracheotomy.—At a meeting of the Paris Surgical Society, Prof. Verneuil reported the case of a woman who was threatened with suffocation in consequence of an enormous goitre. The trachea had been displaced in the direction of the posterior border of the maxilla. Tracheotomy was performed, but owing to the curved position of the trachea, a soft canula had to be inserted and the patient was kept alive by this means for a few days. This was twelve years ago. In October of this year Verneuil employed the soft canula in the case of a man, aged forty, who suffered from an enormous sarcoma of the thyroid gland, because the ordinary canula failed to relieve the attacks of suffocation. He regards the soft canula as indicated in cases where the larynx and trachea are more or less displaced by a tumor.—*Deut. Medizinal Zeitung*, No. 92, 1892.

Treatment of Gonorrhœa.—Dr. W. S. James, of Cleveland, O., writes us that he has employed the following injection with excellent results in the treatment of a case of chronic gonorrhœa, where solutions of sulphate of zinc, nitrate of silver and bichloride of mercury proved inefficient, and that he has derived equal benefit from it in acute cases:

B	
Boracic Acid,	3 iss
Tincture of Iodine,	3 ii
Glycerine,	3 i
Distilled Water q. s. ad	3 iv

M. Sig. To be used as an injection morning and night.
He would like other physicians to give this formula a trial.

Treatment of Uterine-Fibromata.—Dr. Doyen describes the following operation for removal of the entire uterus by laparotomy in cases of subperitoneal fibroids or tumors of the broad ligaments adherent to the uterus:

After incision of the abdominal wall the uterus is turned anteriorly upon the pubes. A bistoury is then introduced deeply into the retro-uterine pouch, and with a single sweep of the knife the posterior peritoneal cul-de-sac and peritoneal envelope of the fibroma are divided. A circular incision passing over the situation of the ovaries is then made, and the tumor is rapidly enucleated sub-peritoneally. Ligatures are next applied below the ovaries and the entire tumor freed from the vagina. The ligatures of both lateral pedicles and the remains of the peritoneal covering of the tumor are drawn downward into the

vagina and fixed with forceps. The abdominal cavity is closed provisionally with clamps, a drain and iodoform gauze are introduced, and then the pelvic peritoneum may be sutured and the abdomen closed.

Extrication versus Colotomy in Rectal Cancer.—Dr. C. B. Kelsey concludes:

1. The operation of excision of cancer of the rectum has a very limited range of application.
2. Kraske's incision, though enlarging the scope of the operation, has, on the whole, in no way improved the results.
3. In colotomy we have a method of treatment almost free from risk and one that in any considerable number of cases will give a longer length of comfortable life.
4. Extrication is more often indicated in non-malignant than in malignant stricture, but even here the advantages over colotomy are not sufficient to justify the increased risk in grave cases requiring extensive operation.—*N. Y. Medical Journal*.

The Electro-Magnet in Cases of Foreign Body in the Cornea.—Dr. Edward Jackson has found the electro-magnet of little use in removing foreign bodies from the cornea, because they are so firmly wedged that its force is entirely insufficient to dislodge them. There is, however, a special form of foreign body for which he has resorted to the electro-magnet, namely grains of gunpowder, which have proven, when the attempt was made to extract them by the method of ordinary foreign bodies, to be so intimately associated with the adjoining corneal tissue as to render it impracticable to extract them in the ordinary way without too much laceration of tissue.—*Maryland Med. Journ.*

Surgical Treatment of Otitis Media.—Dr. Jack (*Boston Medic. and Surg. Journ.*) states:

1. The removal of the drum membrane and ossicles is attended with little annoyance to the patient, proof of which is sufficient to warrant the performance of the operation as the only means of cure in many cases.
2. The operation often produces marked improvement of the hearing.
3. Satisfactory results may be expected toward the relief of tinnitus and vertigo.
4. The results of the operation seem to be permanent.

Antiseptic Memoranda.

Pathology of Uræmia.—Dr. Emory Lanphear concludes as follows on this subject:

1. Our belief in the character of uræmia is undergoing a radical change, and is not yet positively determined.

2. That neither urea nor uric acid can be regarded as the source of symptoms denominated uræmic.

3. That many cases are due to demonstrable kidney lesions, in which cases the nervous phenomena are dependent upon one or more of several unrecognized toxalbumins, two producing convulsions, one coma and one delirium.

4. That some cases occur which cannot be differentiated from uræmia, in which there is no interference with the excretory functions until after the nervous explosion; which cases are dependent upon some, as yet unknown, central nervous disturbance.

5. That many cases of so-called uræmic coma are really instances of cerebral hemorrhage dependent upon the weakened arterial system so commonly found in chronic nephritis.

6. Uræmia immediately following wounds of the urethra, etc., is not due to the rapid absorption of toxic principles from the urine in contact with the abrasions; but is either a nervous disease, or due to previous accumulation of the toxalbumins in the blood.—*Denver Medic. Times.*

Asepsis and Antisepsis in the Lying-in-Chamber.—In a very instructive paper Dr. W. W. Potter lays down the following propositions concerning which he states there should be no dispute:

1. Let us begin by making the patient as nearly clean as it is possible for soap and water to accomplish.

2. Let her, prior to the beginning of labor, have an immersion-bath daily for several days, and with the first manifestations of pains, let her abdomen and genitalia be rendered absolutely aseptic by the further application of germicides in solution, adequate to accomplish the desired end.

3. Let her have a warm vaginal douche, rendered aseptic.

4. Let the lower bowel be thoroughly evacuated by copious lavements of hot water prior to the vaginal bath.

5. Let her bedding be made as pure and clean as careful laundrying can make it.

6. Let her clothing be made equally clean in like manner.

7. Let there be a number of clean bichloride napkins placed in readiness for use.

If all of these injunctions are rigidly enforced, we have done much to lay the foundation for a physiological labor.

The physician and all the attendants must be rendered as scrupulous aseptic as the patient herself. The nurse must be especially trained in the habit of keeping her hands clean. After the first examination, which should be made as carefully and deliberately as possible, the physician should refrain from further examination unless absolutely required.—*Medical News.*

Metastases of the Enteric Fever Bacillus.

Rosin and Hirschel (*Deut. Med. Woch.*) say, that in the various suppurating metastatic foci in enteric fever typhoid bacilli alone or mixed with the ordinary pyogenic organisms have been found. In the furuncles and abscesses seen during convalescence from enteric fever the staphylococcus, and but rarely the streptococcus, has been found alone by one of the authors. A case of enteric fever is then reported in which there appeared about the twentieth day a swelling of the size of a five-mark piece near the tuberosity of the left tibia. There was also œdema of the left foot and leg. An incision was made into this swelling. No pus came out of it, but a piece of necrotic tissue was found in it. Cultivation experiments amply proved the micro-organisms present to be Eberth's bacillus alone. The authors could not absolutely exclude the periosteal origin of the swelling, but the infiltration was apparently in the muscle substance. The thrombosis of some important vein produced the œdema. The authors suggest that in the cases of suppuration, where typhoid bacilli have alone been found, other micro-organisms, being less resistant, may possibly have perished. It has, however, been shown that injections of typhoid bacilli may produce an abscess, and it is possible that under certain conditions the micro-organisms may produce suppuration in the human subject. The above case shows that typhoid bacilli may cause an infiltration which does not break down into pus, and which gradually disappears.—*British Medical Journal.*

Removal of Mother-Marks.—Mix one part of tartrate of antimony with four parts of emplastrum and saponatum, and work into a paste. Apply the mixture over the mark to be removed to the depth of one line (one-twelfth inch) and cover with a slip of gummed paper or court-plaster. On the fourth or fifth day suppuration sets in, and in a few days later scarcely a sign of the mark can be seen.—*Medic. Age.*

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